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AMIGA COMPUTING

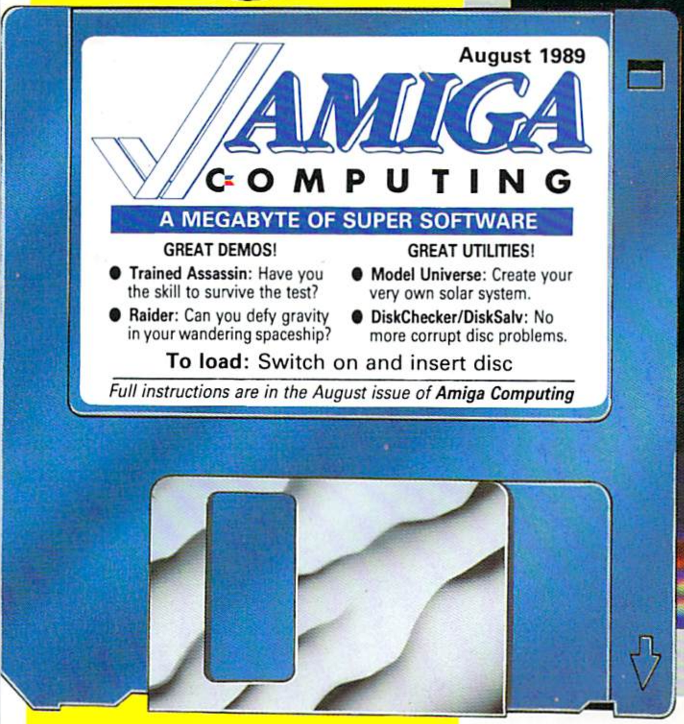


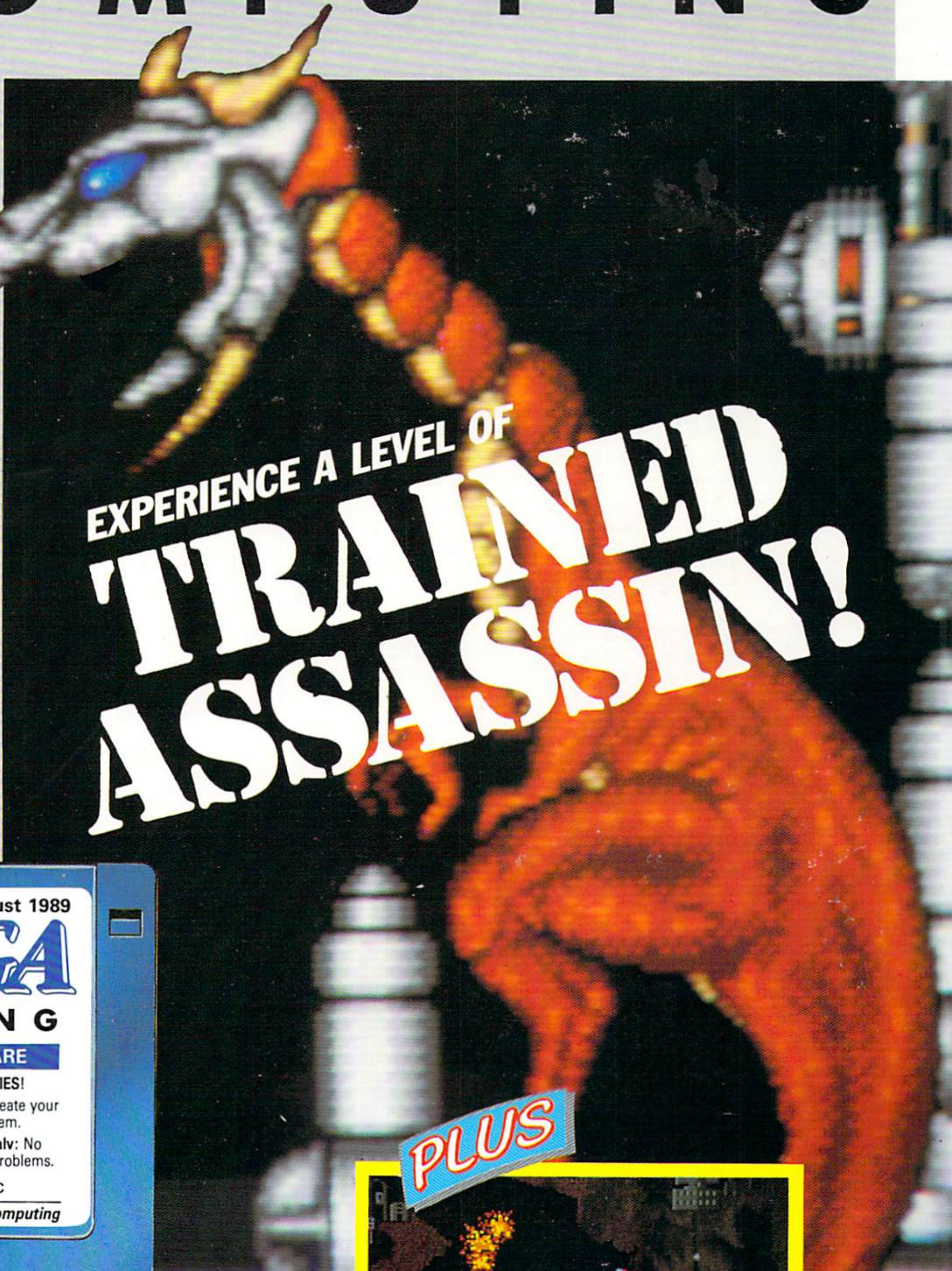
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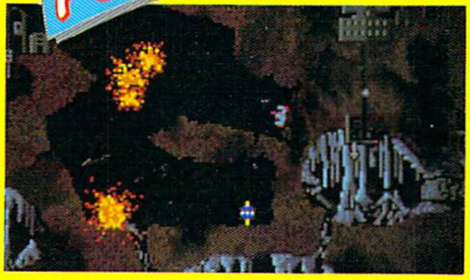
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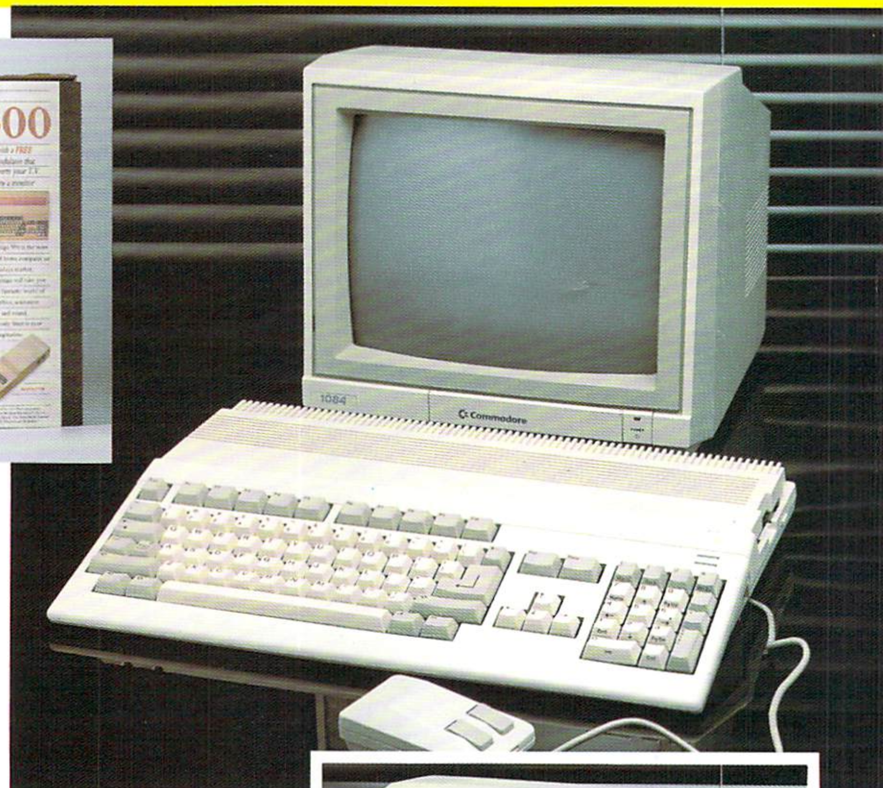


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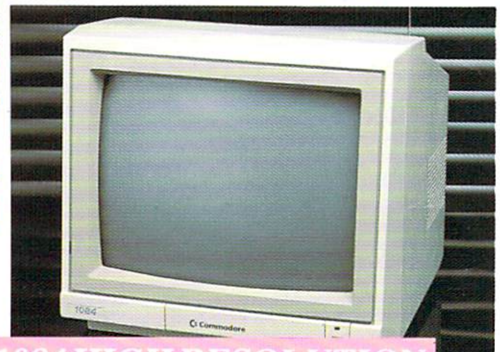
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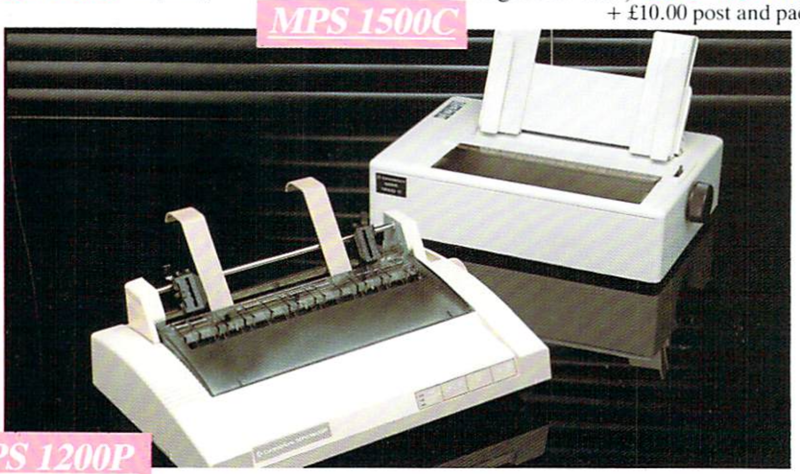
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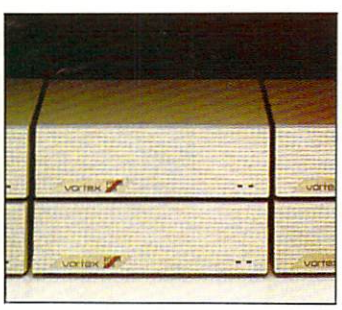
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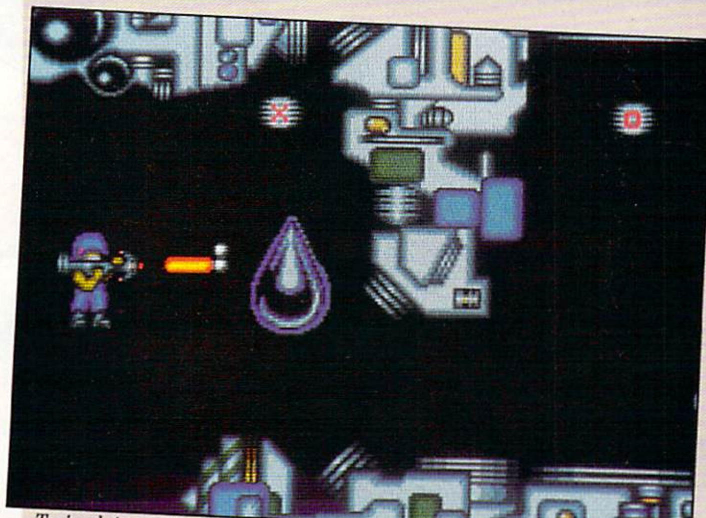
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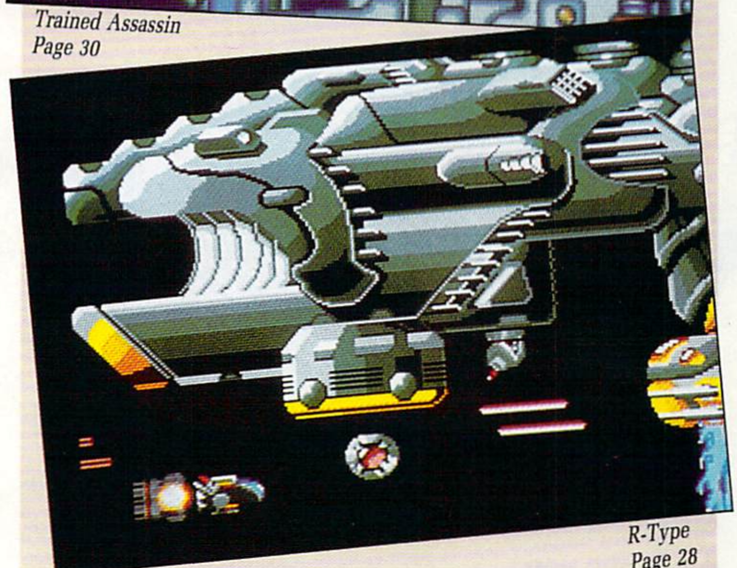








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R-Type Page 28

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AMIGA SCENE

New hardware on way

THE Amiga 3000 is shaping up to be an amazing workstation. Based on the fast 68030 processor, it will still be Amiga-compatible but unlike the A2500 it will not have a 68000.

This means any program which does not run on a 68020/68030 machine – something which uses self-modyfying code – will not work on an Amiga 3000.

The machine is in the early stages of development, so ideas such as individual serial numbers in each machine now being discussed may not make it to the final release.

A stepping stone between the A2500 and A3000 will be the A2630. This is the Commodore 68030 card which runs about 10 times faster than a standard Amiga.

Based on the A2620 card it will take up to 4 meg of ram with more on an additional daughter board. Its designer, Dave Haynie, says it is a far more advanced system than other '030 cards which use the high level of compatibility between the '020 and '030 but fail to take advantage of the bigger chip.

The A590 is a better hard drive than the A2090 so the A2090 is being upgraded with the 2091 which has the high quality DMA/SCSI interface and can take 2 meg of ram.

Only one new product looms for the A500, and that needs other computers. The A560 and A2060 are network cards which allow Amigas to be linked, not just to each other, but to PCs, Macs and other ARCNET systems.

Distributor closes down

SOFTWARE distributor Brown Wagh Direct of 2 Hazlitt Mews, Hazlitt Road, London has ceased trading. *Amiga Computing* has been asked to advise readers that no further orders are being fulfilled.





Stores go for games

AMIGA games players can now reap the benefits of a High Street vote of confidence in 16 bit leisure software. W.H.Smith has trebled its commitment to Amiga games and Boots is to double stocks.

"Selling software is what we do well, and the 16 bit market is the way things are going", said computer buyer for Smiths Sean Willis. "We are intending to put 16 bit into a lot of the smaller stores that do not stock it at the moment".

As a result of the recent decision, the number of Smiths outlets with Amiga games has risen from 43 to 118. Over at Boots, software buyer Rose Graham told *Amiga Computing* that its decision will not only increase the variety of Amiga titles in its main store but will also boost the number of stockists.

At present 240 Boots stores take software but the emphasis is on 8 bit. Only 70 take 16 bit and this will rocket to more than 120.

"It is just a matter of timing", said the spokeswoman. "Boots decided that having stocked 16 bit for some time, now was the time to increase this. We have got to keep up with market changes".

Don't believe all you read..

WHEN you don't have anything to boast about – shut up. Unless you are desperate, then shout so loud about something which is mundane that people will believe you have something special.

So if you come across an exclusive review of Commodore's super new A2500 read it very carefully. You will find that the machine is an A2000 with Commodore's A2620 processor card, a machine *Amiga Computing* reviewed last March.

And if you see a review of Kickstart 1.4 don't believe it, the software isn't finished. *Amiga Computing* had the first full report in April. Now we can spill the beans on some of the newest features.

Kickstart 1.4 is a very different beast to 1.3. While the changes between 1.2 and 1.3 meant that some badly written programs still worked by dint of good fortune, with 1.4 they *will* go belly-up.

The differences are worthwhile. For a start it looks a lot better with improved designs of icons and drawers. Workbench and CLI are better integrated which will hopefully help to de-mystify CLI for new users.

The Arexx programming language, included as standard, allows multi-tasking programs to be linked. So from inside your word processor you can send a file to the DTP program which will then spool a file to disc.

It's the kind of command language invented for big systems which are only useful on micros as powerful as the Amiga.

While some of the improvements are useful, one is essential. This is support for the Enhanced Chip Set. With ECS fitted, an Amiga can use 1 meg of chip ram and display a flicker-free 640 x 512 image although this will need an

Turn to Page 8 ▶

Pointers to the greys

WARNINGS have gone out from Commodore that people buying grey imports of its Amiga 500 could find themselves out on a limb.

Aware that machines are being imported from Holland and sold cheap, Commodore is taking action against dealers found to be stocking the rogue machines. It will also refuse to carry out warranty work.

A spokesman for CBM's technical support department told *Amiga Computing* there are a number of ways to recognise such imports.

All A500s from the UK have bar codes both on the machine and on the packaging if they have come from Commodore in the last 18 months. The power supply on machines from Holland may be 220V rather than 240V.

Unless documents are being translated or forged, the machines could have a Dutch manual and would not have the 12 month UK warranty which goes with all Commodore machines.

"If users ring up with technical questions, they will still be helped because it is very difficult to link them to the grey imports", said the spokesman. "Because of the absence of the UK warranty, no support will be given on that. Commodore is aware that there is a problem and is doing everything possible to stamp it out".

No go area

SOFTWARE cassettes and discs will soon bear an anti-piracy logo which is the latest move by FAST, the Federation Against Software Theft.

Being designed by software house Psygnosis, it is likely to be based on the well-known red circle and diagonal line symbol for prohibition.

It is hoped that when the logo is finished, publishers will be persuaded to use it on their software as a warning against copying.

Amiga 2000 smooths those cartoon capers

WHEN your favourite cartoon character chases his adversary round the screen, it's quite likely that his movements have been coordinated by an Amiga 2000.

A system based around the Amiga 2000 is now speeding up the production of cartoons, making life easier for the animators and improving end results.

Called the Chromocolour Line Tester, it has been developed by Chromocolour Animation Supplies and Equipment (01-636 2103) which provided all the animation kit used in Who Framed Roger Rabbit.

Rolf Harris built his recent Cartoon Club television programme around it and plans to use it for another series, Steven Speilberg is using it for his sequel to An American Tale, a host of top film companies have bought it and even the giant Disney corporation is poised for a massive order.

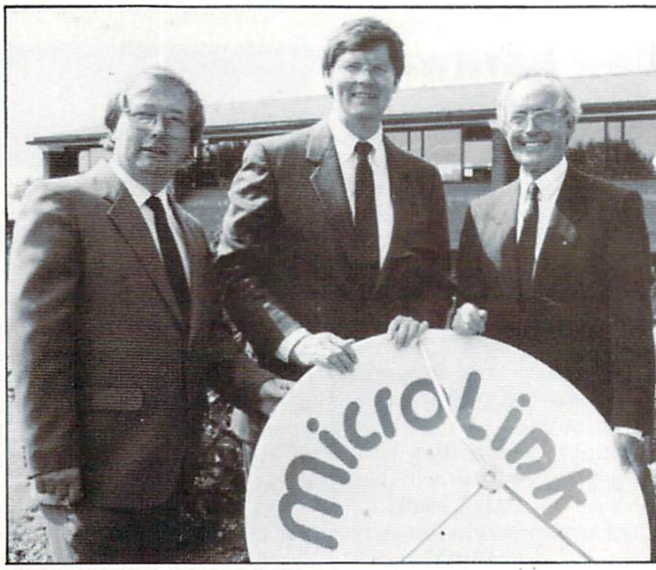
It has also been found that teaching animation to children with the line tester can prompt computer literacy and improve other aspects of education, particularly for those with learning difficulties. This has been proved by Stan Hayward, creator of Henry's Cat, who has used it in a Kilburn school with dramatic results.

The line tester teams up a video camera, digitiser and the Amiga 2000 to shoot animation sequences and play them quickly so timing can be adjusted and movements plotted before acetates are painted.

At present the top professional system costs £10,000 but there are plans to develop a £2,000 version for education and to make a system based on the Amiga 500 for the deomestic market.



Amiga animation set-up



Communications partners David Bromley, sales director, and David Underwood, Istel Inet managing director, with Derek Meakin, chairman of MicroLink.

New role for MicroLink

MAJOR changes are being planned for MicroLink, the rapidly-growing electronic mail service. It will leave Telecom Gold and enter into a partnership with a new telecommunications giant, Istel Inet.

Istel Inet is a partnership of two major international names in the field of data communications, Istel and Bell Canada Enterprises.

"We have long been faced with restrictions that have prevented us developing the service in the way we know our subscribers would like", said MicroLink chairman Derek Meakin. "We feel that the time has come to break away from Telecom Gold and open new doors.

"The result will be a considerable expansion of services available to anyone with a computer, a modem and a telephone".

Many of the present facilities offered by MicroLink will be improved and the new service will also include news, sport and weather, a comprehensive financial section, plus on-line shopping.

Computer conferencing – a service long requested by MicroLink subscribers – will also be introduced.

Waiting for Kickstart 1.4

expensive multi-sync monitor.

The Fat Agnus chip, which gives more elbow room to chip ram, is currently being fitted to new A2000s. A batch of 500s went on sale in Germany with 1 meg chips but that was a mistake at the factory.

The Fast File System, which has won friends in the hard drive-owning community has now come to floppies.

It will speed up disc access 2 to 2.5 times. Old format discs can still be read, written and created, but this is the area in which *Amiga Computing* suspects most things will fail to work.

Intuition now features auto-scrolling, custom gadgets and new string gadgets, which will lead to better requesters and a special kind of window which is character mapped. Currently all text on an Amiga screen is plotted a pixel at a time. The new mode plots whole characters at a time, which should be very much faster.

Major changes have taken place with Preferences. At the moment the Preferences program writes out a file

Airborne gameplay

PLESSEY is making Amigas smaller. The aerospace company is working on the next generation of in-flight entertainment. Instead of trying to watch a film with all the rude bits taken out over seat backs in the half-dark and wishing the chap in 27D would shut his blind, you can play with an Amiga.

The system will build an Amiga into every seat with a small LCD screen set into the back of the seat in front. The passenger will be able to watch the film on this screen or play games. All the Amigas will be networked so passengers can order duty free goods, reserve hotel rooms and through a link to the planes flight computer see where they are.

To produce this system Plessey is doing a lot of development work on the Amiga, some of which may filter down to the ordinary Amiga user. We want to play a multi-user flight sim against 200 other passengers.

Business is booming

A DEAL now set to top the £1 million mark has been signed between HB Marketing (089-544 4433) and audio visual firm OEC under which HB is supplying genlocks and other Amiga peripherals for use with OEC's audio visual presenter Teleslide. It is also to give advisory support on use of the Amiga, which controls this latest product.

"The initial agreement was worth over £500,000 but since then it has risen closer to £1 million", said Julian Swallow of HB. "It is an ongoing relationship which will bring us even more business and obviously we are over the moon. We have had two and a half years experience in both hardware and software for the Amiga and this is now paying off".

HB is shortly to extend its range of Amiga-related products with the Amiga Virus Protection Toolbox developed by Abacus in America.

"The package contains a book and software", said Jim Oldfield of Abacus. "The book describes the phenomenon and the measures you can take to protect your computer system from the harmful effects of a virus and the software hunts down suspicious programs".

With HB awaiting stocks from America, the UK price has not yet been fixed. It sells for $59.95 in the US.

called System-configuration. With 1.4 the file will not only be written by Preferences but will be expandable from other programs.

The changes involved with Kickstart 1.4 are so major that the release must be a long way away.

Workbench 1.3 took more than a year to be released from the first announcements. You can get a pre-release version of 1.4 if you buy the £1,700 Moniterm big screen, but for ordinary users not only is it not finished it is probably too buggy to be worth rushing into.

ZCL into education

DISTRIBUTOR ZCL (0543 414817) has become one of Commodore's authorised educational distributors to the trade.

David Cheetham, ZCL's national account manager for Commodore products, said: "We are already one of the biggest leisure suppliers in the country and we are on target for the business market having taken on Commodore's PC and Amiga 2000s two months ago. A move into the education market seemed like a natural progression".



Amiga in class at Tivetshall Primary School

Schoolroom Amigas collect top marks

NOW two thirds of the way through its nine month preliminary stage, Commodore's Primary Project is bringing some startling results in schools.

It was launched in January to assess the potential of the Amiga 500/2000 for teaching in primary schools.

The pilot project started with schools in Somerset, Norfolk, Humberside, Berkshire and Cheshire being supplied with Amiga 500s by Commodore. They also received suitable word processing software.

Impact on classrooms has been notable according to the supervisor of the project, Wiesia Okon, of Commodore's education division.

"I have found that children are expressing themselves through the computer on a number of levels, as well as actually doing something such as painting on the Amiga. There is always a lot of talking and discussion going on around the machine", he said.

"The stimulus that the Amiga can give to encourage group work fits in well with the IT philosophy of primary education. The computer enhances and complements the work already done by teachers and pupils in the classroom".

Surprised by his pupils' reaction to the Amiga was Richard Adams, a teacher at Holway Community Junior School.

"All the children have been extremely enthusiastic", he said. "Children with quite severe learning difficulties are suddenly on an exciting par with their peers. So far the Amiga 500 has brought out qualities in some children that I did not know existed".

The same effects were noticed by Ian Hollingsworth, headmaster of Tivetshall County Primary School in Norfolk.

"I have found the children to be less inhibited than adults in their use of the computer" he said. "The Amiga's mouse has made it very accessible for pupils with the art package DeluxePaint II creating a discussion point for lessons".

Findings of the exercise will be used by Commodore to make the Amiga compatible with everyday teaching practices as part of the company's ongoing assault on the education market.

Bargain hunters' delight

Commodore computer show

Simon Rockman reporting

WHEN 16k was a lot of memory, it was the Pet Show. With the popularity of the 64k machine it became the Commodore Show. Perhaps the 13th Commodore Show should have been called the Amiga Show.

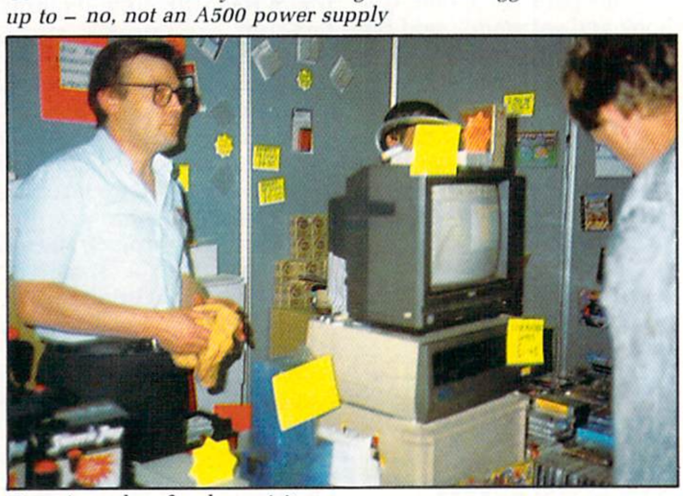
Downstairs bore a resemblance to a Far Eastern street market as masses bartered for everything from £1 mouse holders to £650 A2000s. Shows have always been a good place to buy blank discs. At the Novotel 70p each bought good quality double sided discs if you shopped around.

Whatever your interest or budget there was something to be picked up. Power Computing was doing some good deals on its range of hard drives which offer super fast Quantum units as an option.

The 25Mhz 68030 cards which should speed up an Amiga tenfold spent the show stuck in customs. Even I dug into my pocket to buy a 1.3 rom.



Commodore will sell you something warm to snuggle up to – no, not an A500 power supply



Bargains galore for show visitors

COMMODORE itself announced an entire new range of merchandise, which in non - salesmanspeak means gifts with the Commodore logo – from a Commodore teddy to key rings and mugs. In true computer company fashion the wallets were not yet available. No doubt they are still writing the manual.

Still, if you really want to snuggle up with a little teddy contact Commodore on 0628 770088. In all other respects the Commodore stand was a disappointment. No machines with the Enhanced Chip Set, no hi-res A2024 monitors (the Commodore version of the Moniterm reviewed last April).

The nearest anything got to being new was the A590, reviewed last month. This succeeded in frustrating me since they are not on sale yet and I want to buy one.

The show saw the public announcement of the *Amiga Computing* cover disc, which led to a rush for subscriptions at the old price. If you filled in a survey form to tell us what you want on the disc, thanks. If not send us a letter – we'd love to know.

Thanks to Fred Fish and some like-minded followers, the Amiga has more, and better organised, public domain software than any other modern computer. A sign of this is the flourishing club run by 17 Bit Software. This was one of the busiest stands as Amigaphiles queued to see what was new and fill gaps in their PD collection.

Two products from ASAP had a low-key launch. The Amidrive was shown, but having only just gone into production was not for sale. The first shipment had been sent to people with outstanding orders.

Aminet, which is a low-cost network developed for use in schools, was the second ASAP product to make its debut.

Hi Tension is classed by Commodore as a VAR, which stands for Value Added Reseller, and sells Amigas as part of a package by adding its own custom add-ons. Demonstrated at the show was an incredibly powerful video card capable of animating a 1024 x 1024 pixel display in colour. For more details contact Hi Tension on 0252 344454. If your pocket is not too deep have a look at its 16 colour desktop utility, Icon Paint.

While the Amiga leads the field in many areas it lags behind in one, accounting software. Equinox Business Systems aims to fill this gap with Small Business Accounts, a comprehensive package with balance sheet, profit and loss, budgets, VAT, a full audit trail and quick ways of checking profitablity.

There are extra modules for more advanced users and a £30 personal version for controlling day-to-day finances. For more details contact Equinox on 01-729 0990

THE most exciting stand was Amiga Centre Scotland which always has interesting bits and bobs. Among them was a high resolution 24 bit colour graphics card running through the PC Bridgeboard to display Sculpt Animate 4D images. They were of television quality and "only took about 15 hours to render on an '030 machine". Make that over a week (just calculating) on a standard Amiga.

Amiga Centre Scotland also had Digiworks on sale for the first time and a new static ram board which retains its memory even when the Amiga is switched off so you can auto-boot from the ram disc. No price has yet been fixed. *Amiga Computing* will be reviewing it soon.

I was really impressed by Rob Munday's Hologram. Produced at the Royal College of Art where Rob is a lecturer, it gave a 3D view of an image from Sculpt 3D. The first ever home computer-produced hologram, it will be very important as this technique will lead to colour holography. For more details on any of the Amiga Centre Scotland attractions contact 031-557 4242.

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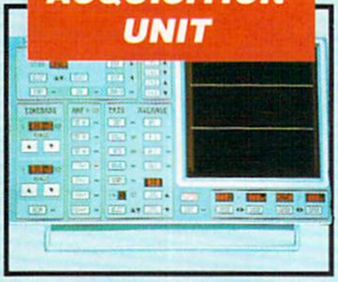
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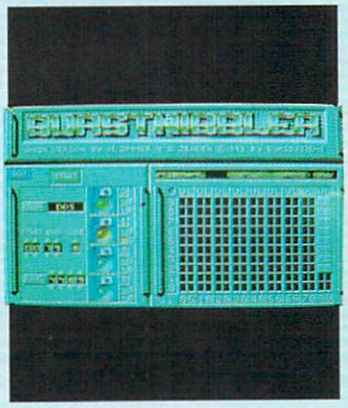
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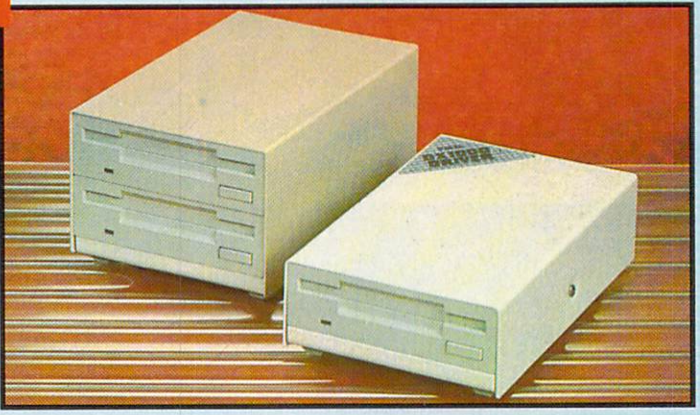
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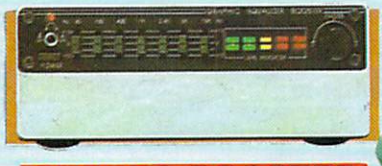


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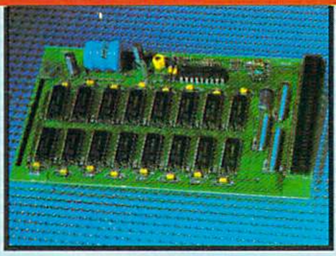
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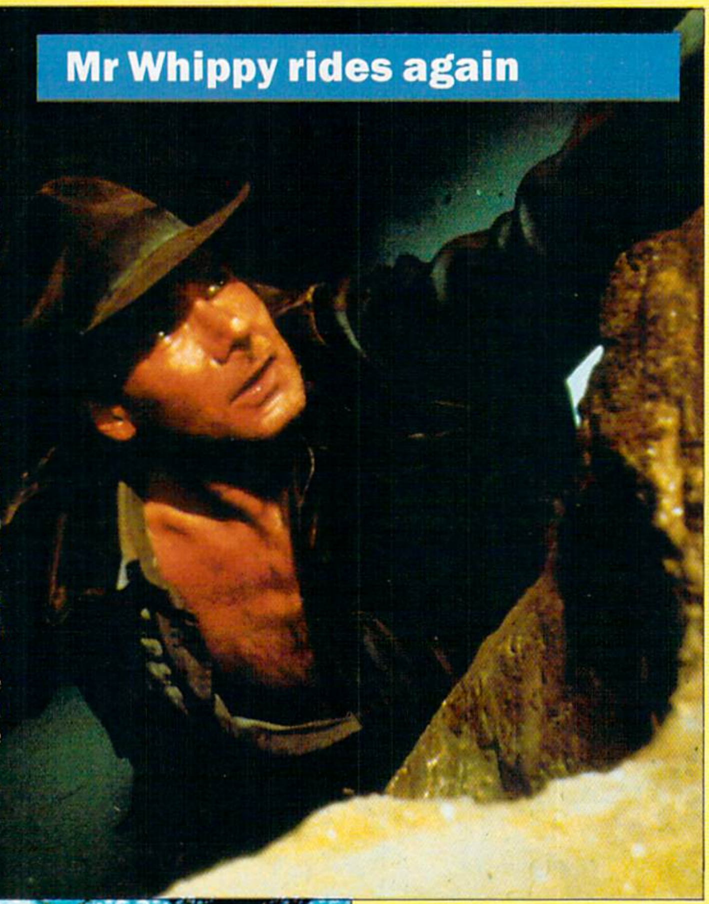
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Amiga Arcade

Mr Whippy rides again



THIS month sees the release of the third film in the Indiana Jones series, and along with it the Lucasfilm computer game tie-in.

Details are thin on the ground just now – US Gold is keeping quiet until its big release at Stringfellows, a night club so famous they don't bother putting the address on the invites.

However, it seems Indiana Jones and the Last Crusade will have you scrambling across a rumbling circus train, battling against savage rats, playing a human fly on granite castle walls... all in an attempt to track down the elusive Holy Grail.

Following the all-format arcade game, Lucasfilm will be releasing a 16 bit only adventure based on the same plot. More news next month when we get back from the big event.

In his spare time Harrisson Ford enjoys underground hang gliding and listening to hard rock.



Indiana Jones and two YTS, workers prepare Stringfellows for the big launch

Carry on sniggering

SEX Vixens from Outer Space was released last year amid a wave of smutty sniggers. It was an adventure with graphics about a colony of beautiful sex-starved female clones from the planet Mondo.

Coming soon from Free Spirit Software of Kutztown, USA, is a sequel, Planet of Lust. It will once again star Brad Stallion as captain of the spaceship Big Thruster.

In a tacky plot featuring Dr. Dildo and Princess Orgasma, your mission will be to destroy a force field around the planet Erotica.

"The music and sound effects are quite unique," says programmer Joe Hubbard.

I expect they are. Yawn.

Time is on their side

OXFORD Digital Enterprises has spent the past year researching techniques for generating highly realistic animation on the Amiga. The upshot is a combination of high frame rates with video-generated images of animation positions.

The first game to use this new technique will be Time, an animated role-playing journey which takes you through the ages.

It starts at some time in the future in the gallery of a satellite orbiting the earth – a futuristic Madame Tussaud's filled with statues of very famous and very dead people.

Your quest in Time will take you back through the ages to meet the folk these waxworks were modelled from, people like Julius Caesar, Merlin and Leonardo Da Vinci.

When finished, Time will feature more than 200 fully animated characters, each of which will be depicted in mid-shot as a 60 pixel high smoothly animated character, or in extreme close-up as a full screen animated face.

There will be 10 major playing areas, which themselves will contain 10 horizontally scrolling scenes. All characters will act independently of the player, transferring objects and shifting alliances as the game progresses.

Techniques borrowed from the cinema – like fast cuts from long-shots to close-ups – promise to bring the game to life like none before.

ODE is developing the flagship version of the game on the Amiga. It will be released in the autumn on the Empire label.

Courting success

IMAGEWORKS is developing the ultimate tennis sensation, Passing Shot – a Sega coin-op licence. The game simulates a grand slam season, with doubles or singles championships taking place across the globe, covering both clay and grass courts.

Start warming up for Passing Shot now, it'll be out in the autumn, just in time for the indoor season.

All the latest news on the games software scene

Active goes for world domination

SOUTH London public relations company Active Sales & Marketing has added Bethesda Software of Maryland, USA, to its growing list of international clients.

Bethesda's first release with Active is Wayne Gretzky Hockey – a misleading title if you don't know he is an American ice hockey hero.

The game features digitised fights, animated penalty calls and an instant replay feature. You can control any player, coach from the bench or sit back and watch the computer control both teams.

Detailed 3D graphics highlight the intricate stickwork and skating of each player on the ice, while the alternative view from above is the perfect vantage point from which to appreciate the game's offensive and defensive strategies.

Wayne Gretzky Hockey has been voted best sports simulation of the year by the American Software Publishers Association. It's release in the States caused The Washington Post to write: "...it could be the best sports simulation yet".

Out in the UK now, it costs £24.99 and we'll be taking a timeout half way through the third period to give it a full appraisal next month.

On the continent, Active represents the UK interests of French labels Coktel Vision and Tomahawk, plus the German games house EAS. Until this month EAS had been building itself quite a reputation for excellent graphics and absorbing gameplay. Then it released Stag, which has scored an all-time low of 11 per cent in this month's Arcade.

This will inevitably affect the reception of its next few releases – Roll-Out, Wangler and Black Magic. But Kayden Garth, a D&D type game, should go a long way towards putting EAS back on the map.

Kayden Garth is the name of a prisoner detention planet, only the prisoners have escaped their chains and you've been given the job of putting down the rebellion.

The game contains 30 dungeons to explore and features some marvellous 3D and bird's-eye view graphics. EAS estimates there is 60 hours of playtime in Kayden Garth, which is out now priced £19.95.

Active also does the PR and sales in the UK for the Impressions label, the first release on which, Raider, is featured on our cover disc this month.

The follow-up to Raider is Chariots of Wrath, a game which has caused the mighty Mirrorsoft to question its ancestry. Apparently the screenshots Active distributed bear a resemblance to MirrorSoft's big summer release, Xenon II.

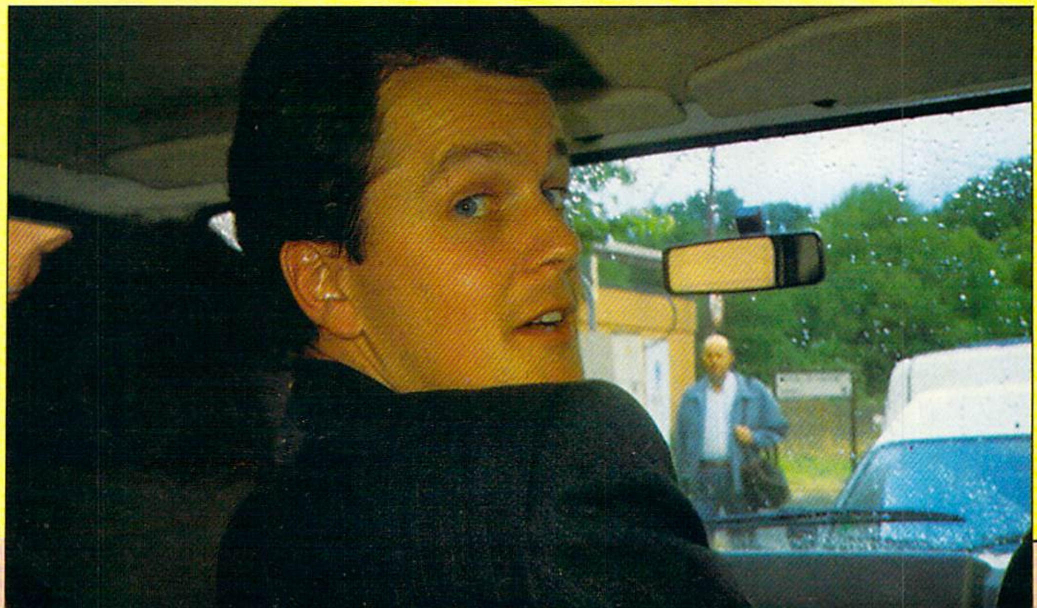
The screenshots we received were so badly blurred and over exposed that they resembled nothing more than a bad accident.

Chariots of Wrath is being hyped as an arcade epic – "the most amazing shoot-'em-up yet for the Amiga" it says here.

Written by the team responsible for Sidewinder II, it features in excess of 300 combinations of weapons and seven totally different game types.

Some of the meanest and ugliest end-of-level aliens yet are promised, all of whom will be trying to prevent you rescuing the inevitable captured princess.

It should be in the shops by the time you read this, priced £24.99. Watch these pages to see if it's all just hype.



Not even jetsetter Robert Stallibrass, the driving force behind Active Sales, can do anything about a Paris traffic jam

REVIEWED THIS MONTH

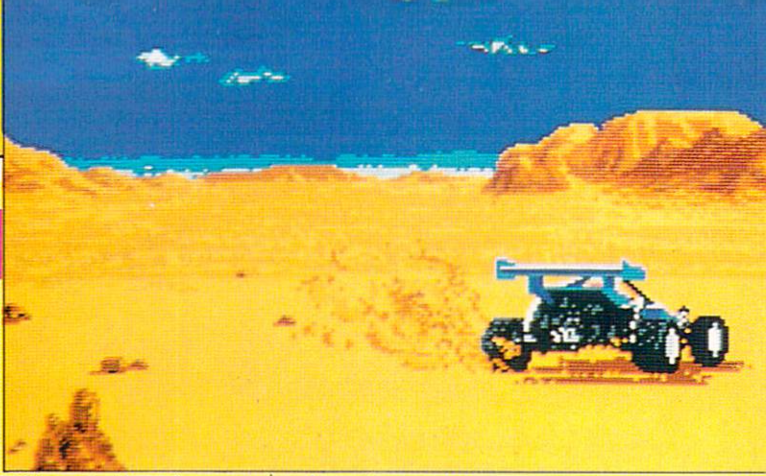
95% Trained Assassin
91% Powerdrome
88% Balance of Power
87% Zork Zero
86% R-Type
83% 3D Pool
73% Evil Garden
68% Vindicators
67% Artura
64% Dark Side
61% Rampage
51% Tom and Jerry
47% Gunship
43% Crazy Cars II
43% Run the Gauntlet
11% S.T.A.G.

MAX HACKS

- 3D Pool
- Baal
- IK+
- Lords of the Rising Sun
- Scorpion
- Silkworm

Gallup Chart

		Last Month
1	Populous, Electronic Arts, £24.95	1
2	Lords of the Rising Sun, Electronic Arts, £24.99	NE
3	MicroProse Soccer, MicroProse, £24.99	NE
4	Forgotten Worlds, US Gold, £19.99	NE
5	Gunship, MicroProse, £29.99	NE
6	Blood Money, Psygnosis, £24.99	10
7	Kick Off, Anco, £19.99	NE
8	Silkworm, Virgin Games, £19.99	NE
9	Falcon, MirrorSoft, £29.95	3
10	Millennium 2.2, Electric Dreams, £29.99	NE



African Raiders, fast action and good gameplay

No more nudes for Tomahawk

FRENCH games label Tomahawk has its sights well and truly set on 1992. Not satisfied with being part of one of the top three houses in France, Tomahawk is ready to invade Britain and Europe in a big way.

The label was launched earlier this year as a sister to Coktel Vision, which has already had a taste of the discerning British with the success of Freedom *(80%, AmC February 1989)* and the failure of 20,000 Leagues under the Sea *(15%, AmC March 1989)*.

You'll remember Tomahawk's first release, Emmanuelle. It sank like a brick, scoring 37% in the June issue. But it served its purpose in getting the Tomahawk brand name known.

Sensational publicity stunt over and done with, Tomahawk has announced its release schedule for the coming months. And it's looking good.

Already in your shops is African Raiders, a game which the company modestly understates as a "simulation of driving".

It's a whole lot more than that. Have you ever played a driving game and wished you could whizz off in any direction under the sun? Well now you can.

African Raiders is a race from Tunis to Dakar across the burning sands of the western Sahara. There is a track – for those who want to follow it – marked out with oil drums, but it takes a winding course and sticking to it isn't going to get you home first.

The game comes with a poster which also serves as an accurate map. Within it's limits you can travel in any direction you like. Not just north, south, east and west, but right around the 360 degrees of the compass.

You can even reverse. In fact situations crop up regularly where going backwards is the only way forwards.

Leaping and bounding off the beaten track at more than 200 kph has its hazards. Great herds of camels sleeping behind rocks inhabit some areas. Other districts are littered with bones – last year's models, says Tomahawk.

Quicksand is all over the place. Which is where your selectable two-wheel or four-wheel drive comes in handy. Doesn't help much in the graveyard though, where the rusting wrecks of unsuccessful competitors – bikes, buggies and jeeps – stick up out of the dunes like tombstones and stop you in much the same way as do the camels.

All the hazards are marked clearly on the map. Careful drivers will avoid them. Explorers and burn-it-up merchants will deliberately seek them out.

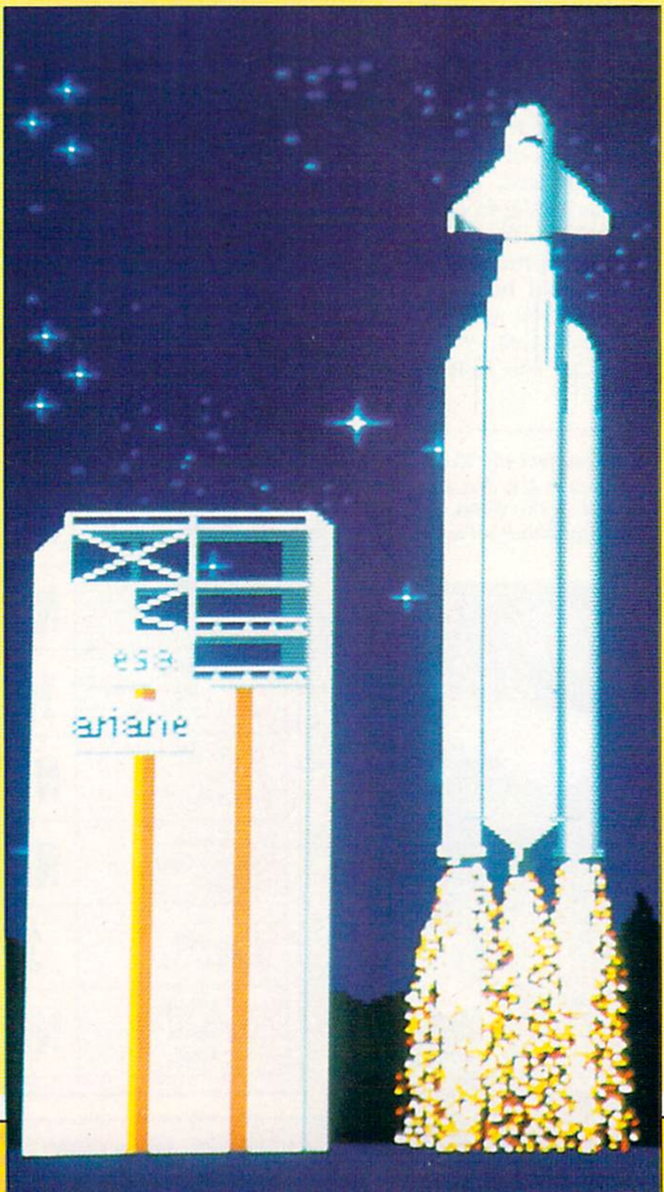


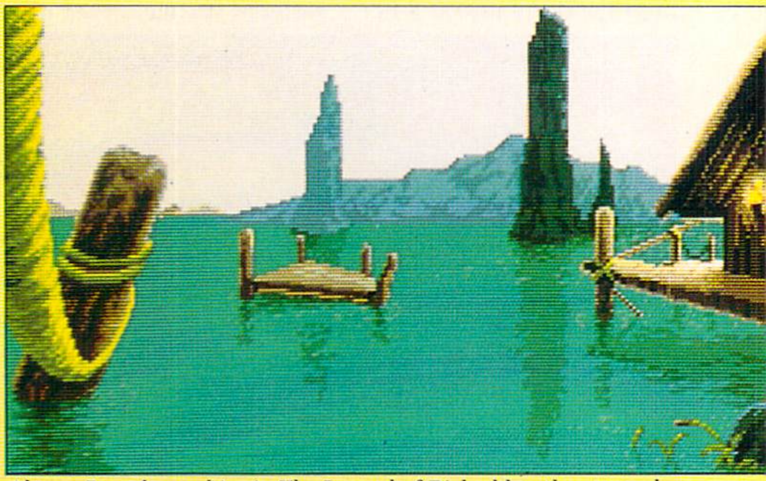
Tomahawk boss Roland Oskian has a wink and a smile for the hard-to-please British

It's fast, it's fun and it's in the shops now priced at £19.99. We'll have a full review next month.

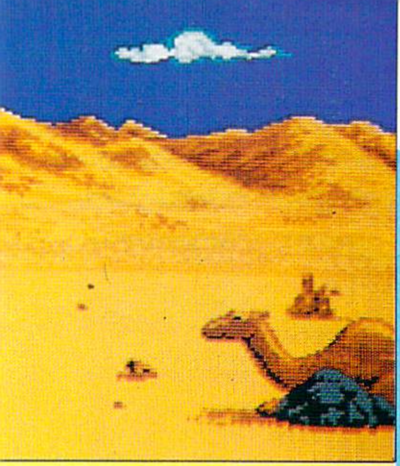
Hot on the heels of African Raiders will be The Legend of Djel, a point-and-click adventure featuring 30 superbly drawn screens. Set in the Middle Ages, you live in one of four imaginary kingdoms, all of which are suffering from different problems due to circumstances under the control of neighbouring lands.

Your mission is to rescue a sorcerer's daughter – represented on-screen by a (non-tacky) rendition of the graphics artist's girlfriend –





Above: Superb graphics in The Legend of Djel add to the atmosphere
Left: ESS Hermes blasts into orbit in this early Amiga version screenshot



and collect the bits and pieces which will bring health and prosperity to the four kingdoms once more. Enroute you will have to solve some fiendish puzzles and have the weirdest shoot-out you've ever seen.

The Legend of Djel will come on two, maybe three, discs and will cost £24.99.

Still under construction when we went to France recently to investigate the Tomahawk phenomenon is ESS Hermes. This game will put you in full control of the European space shuttle right down to working out your flight path, and will give you a choice of various missions.

On the flying front you can try landing, atmosphere re-entry or special manoeuvres, after which you can turn your hand to running a satellite park or setting up an orbital space station.

In the re-entry sequence, the only animated part of the game we were able to see – running on a PC of all things – you are presented with a 3D representation of the sky ahead viewed from behind your craft (like Afterburner).

Hard to judge a whole game on one sequence, but it looked good enough to leave us wanting to see more.



Horror at Lizard Breath



Cinemaware says it came from the desert, but we have evidence that it came from the Watford Gap

HAVING successfully translated gangster movies, comedies, Saturday morning matinees and adventure films into computer games.

Cinemaware has now turned its attention to the tongue-in-cheek horror genre with It Came From The Desert.

The game is a tribute to the Big Bug films of the 1950s and is set in the isolated community of Lizard Breath, Arizona. One day a meteor strikes nearby and mysterious events and disappearances start to plague the town.

You are cast as a young scientist determined to get to the bottom of the affair. In doing so you will risk your life as you face creatures spawned from the supernatural.

Cinemaware claims it is the biggest arcade strategy contest ever created on a personal computer.

Now where have we heard that before?

Watching the detectives

INLAY cards are usually full of rubbish about how the Qwerties are fighting a terrible space war with the evil Yuiops. Electronic Arts has sent us details of The Hound of Shadow, which has a plot that sounds a bit like this.

According to EA it is a role-playing adventure game with an underlying supernatural theme. Using Eldritch Games's special Timeline role-gaming system it shares the feel of the Cthulu Mythos which was developed by the author H. P. Lovecraft.

You create a character based on one of six professors with different options for sex, nationality and proficiency in more than 50 skills. Set in the sepia tone of the mid '20s, this is an historically accurate detective game.

The Hound of Shadow is scheduled for release late September, price £24.99.



Chris Elliott and Dick Edwards of Eldritch Games on the trail of The Hound of Shadow (It's behind you.)



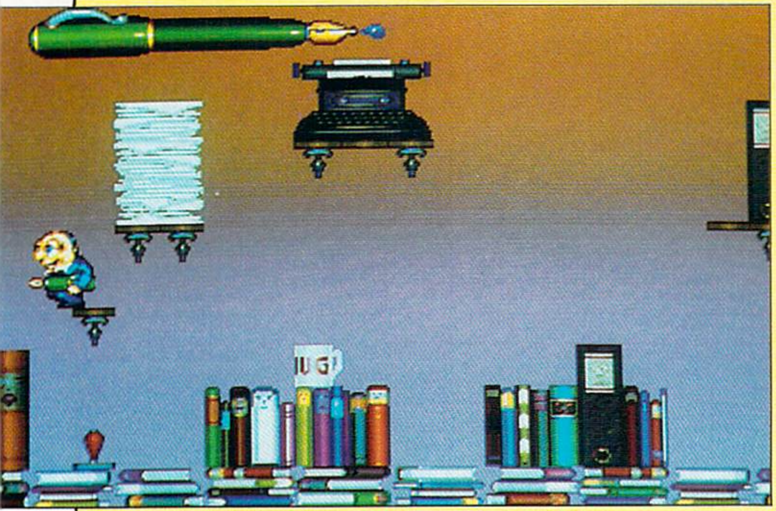
You'll need the resolve of Maggie and the skill of Fatima to kill the snarl of Castle Warriors's big red dragon.

Imageworks does it first

HAM is unique to the Amiga – and to think it was nearly taken out of the design because Jay Miner, the chip designer, didn't think it was particularly useful.

Unless you want impressive static screens you might think Jay was right. If you've tried cutting out a brush with Photon Paint you will know that HAM leads to slow sprites and furry edges.

Imageworks has cracked the problem to produce DDT, named after the CP/M utility Dynamic Debugging Tool. The result is an amazingly colourful game with some incredibly detailed objects.



DDT may only be NTSC, but all 200 lines are HAM – the first game ever to do so

Parisian poison

FOLLOWING the success of Bio Challenge, Paris-based Delphine Software's second UK release is to be Castle Warrior, a six level arcade-style action game.

You take the role of Prince Edred the Brave, heir apparent to the throne of Pacifia. Your father, Edelred the Good, has been poisoned by the evil wizard Zandor (the Nothing).

Rather than rushing to the treasury to count all the money you'll be coming into, you decide a better course of action is to go off on a quest to force the antidote from the evil wizard.

To reach him and gain the potion you will have to battle through subterranean caverns filled with deadly monsters, spear the massive red dragon Olisos, paddle a canoe along an underground stream dodging rocks and falling stalactites, defeat the huge demon Jibba, and dodge Zandor's spells.

In the final level you will have to dodge more mighty dragons as you fly high above the clouds on your victorious journey home.

Sounds lethal. Out "real soon now" at £24.99.

Hewson backs private enterprise

COMMODORE 64 owners may remember enjoying Battle Valley from Hewson. The programming team, known as Creative Thought, did. In fact they enjoyed the game so much they wrote their own version for the Amiga.

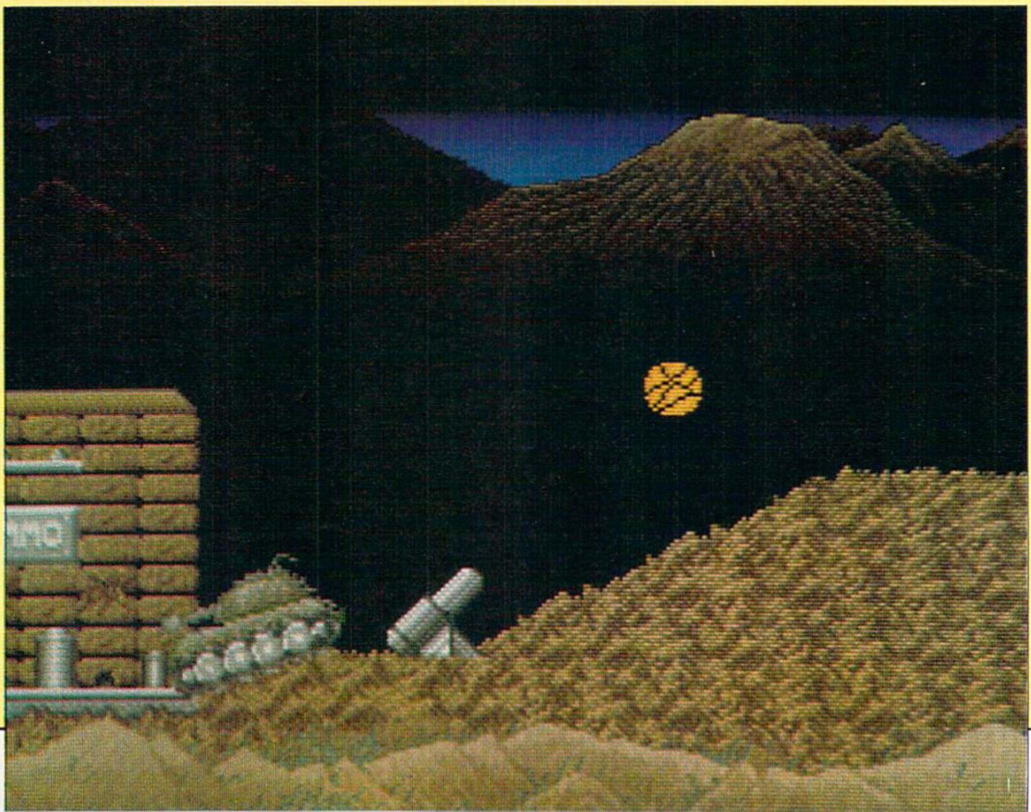
Hewson, being suitably impressed, sorted out some whizzo music and bought the program from them.

The plot is simple; winning is not. The world is almost devoid of missiles and people can live in peace – except that a gang of terrorists has made off with the last two missiles and is threatening to unleash them on world capitals.

The missiles are hidden behind well-defended bases in the desert of Battle Valley and can be captured using a tank. Unfortunately the tank can't cross bridges which have been blown up by the terrorists.

You need to repair the crossings and take out defences using a helicopter gunship. Once the way is clear you can use the tank to mop up the last resistance and capture the base.

At either ends of the beautiful, smooth scrolling landscapes are the missile silos. Can you make it that far and save the world? It'll cost you £19.99 to find out. Release date August.



Battle Valley from Hewson features three levels of wonderful parallax scrolling

EXCLUSIVE

3D POOL

A dip into your pocket

ORLANDO is famed for Frak!, his cutesy Beeb game which was ever so badly ported to the C64 by Statesoft. His is also the name behind a number of quite brilliant Acornsoft titles. Now Orlando has discovered the Amiga, and has ported his 3D Pool game from the Archimedes and ST.

This is a pool game like no other. It aims to simulate the game from the position of a player. The big O says this is the reason you can't see the table from directly overhead.

Even if you stood on the table – before the manager kicked you out – you wouldn't get a proper overhead view. You would see your feet and the light would get in the way.

So what you get is what you see – a player's eye view of the table. Except there is no cue. The white ball is fired along the player's line of sight with top-spin and bottom-spin relying on the viewing angle. Side-spin is selected from an icon at the top of the screen.

Although you move around the table, the lack of a floor sometimes makes it feel as though you are staying still and throwing the table around.

The mouse mechanism takes some getting used to. Since both 3D Pool and Virus started their respective lives on the Archimedes, it might be something to do with Acorn programmers being able to cope with sensitive mice.

Pool is a short game, which makes it more exciting than snooker. Even so, 3D Pool heightens the competition by providing a number of computer-generated opponents who play at different strengths.

You can either practice against an individual or take part in a tournament in which the players are drawn at random. The final is played against Maltese Joe Barbara.

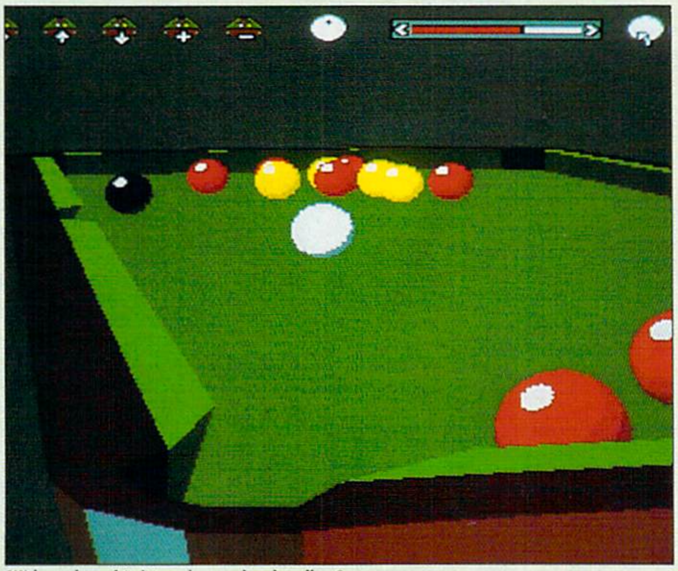
Once you have proved you are the hottest cueman to have laid hands on a mouse you can have a go at the trick shots. These display numbers for the angles involved and have you trying to puzzle over how to get balls into the right pockets. After you have solved the 19 tricks you can set up your own using an editor.

From the initial title screen – which was digitised using SuperPic right here in the *Amiga Computing* office – to the roar of the crowd as you defeat Mr Joe, 3D Pool is great. It is playable, slick and technically brilliant.

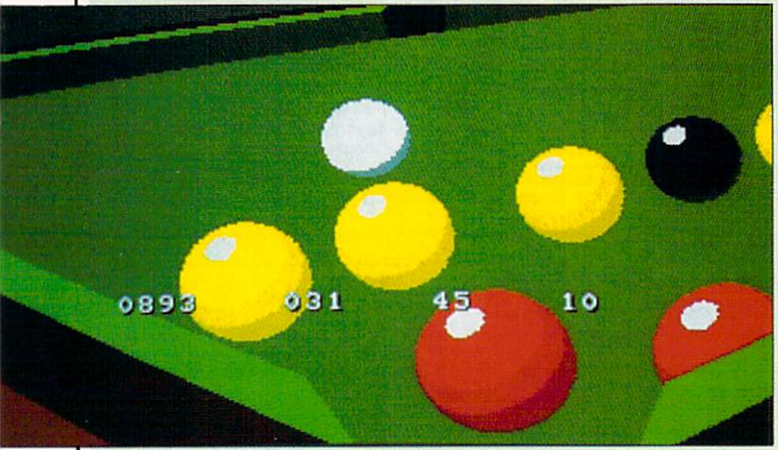
Fully Amigaised to use sampled sound, a 256 line PAL display and blitter routines, the result is better than the ST. But then why else did you buy an Amiga?

Simon Rockman

3D Pool	
£24.95	
Microprose/Firebird	
Sound	██████░░░░
Graphics	████████░░
Gameplay	██████████
Value	█████████░
Overall – 83%	



With pockets this big, who needs a handbag?



See page 87 for trick shot tips

GIVE an infinite amount of designers an infinite amount of time, coffee and money, and it's easy to make a completely original computer game. If the coffee's a problem you could always set about taking an old idea and "originalising" it.

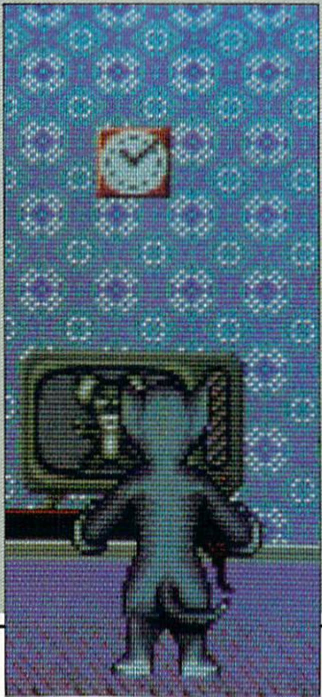
For example, you could take Centipede and add some of the ideas which made Arkanoid different from Breakout. The resulting game would end up tolerably close to Demonware's Evil Garden.

The box is the first main hazard; not merely is it huge, silver and difficult to open, but it has Beware of Demonware writ large in red all over it. Somehow I think this is meant to be a threat rather than a warning.

The plot: You, a successful mercenary, have the job of clearing a garden planet of mushrooms, alien centipedes and other beasties. Centipedes are relatively innocuous; they are only nasty on contact and the bits you have shot off them become more mushrooms.

The spider usually haunts its web under the score panel, but once in a while it comes out to bounce around and drop mines.

Fleas fall from the top of the screen at an enormous rate. They're very hard to hit and leave a trail of mushrooms behind them. Other beasties appear every so often to say a big Hi



THERE can be few people who have not heard of Tom and Jerry, the funniest double-act ever, responsible for bringing more gratuitous violence to our screens than Rambo, The Professionals and EastEnders combined.

With the exception of the later cartoons, which at a generous assessment were rubbish, most of their adventures have stood the test of time and still manage to be funny at the fifteenth time of viewing.

So if it works for a cartoon, the same zany formula should work for a computer game. Right? Well it's a good theory.

The game's opening credits are promising, with accurate renditions of both characters, and the Amiga's sound capabilities reproduce Tom's manic laughter perfectly. The action,

EVIL GARDEN

Can you dig it?

and drop the occasional bomb on you.

This plot will be familiar to both of the Millipede fans, Atari's less successful Centipede sequel. What is new is the pumpkin, which gives bonus weaponry when shot.

The standard issue peashooter-on-a- stick can be upgraded, with a little luck, to a shielded turret with bouncing bullets and an orbiting follower. As in Arkanoid, extra lives and a doorway to the next level can be got by picking up pumpkin remains.

Not surprisingly there is the standard issue mystery prize, which is often a feature which stops you shooting quickly. In the Equally Nice department is the little pill which turns all the mushrooms into centipedes. The screen becomes full of the beasties, all heading your way.

Every so often you get a bonus screen which has a huge Audrey II type plant spitting things at you. Hit it often enough and it's biggus bonus time. Apart from that, there's nothing really new. Nothing new apart from a full PAL screen, chock full of fast moving (small) sprites.

Two, three or four players? No problem. Two players simultaneously? Likewise. All this and 1 meg enhancements too.

A useful few minutes can be spent reading the manual while the game loads – it takes far longer than you'd expect. In fact, Evil Garden seems to take at least twice as long to load as it did the last time you loaded it. And even when the drive light goes out, it's only pausing between loading sessions.

Once you've run out of lives the disc graunches away and takes at least five seconds to tell you that it's game over time.

Despite the minor loading groans, and the irksome "Type in the word" routine – which only gives you one go and swaps Y and Z around – Evil Garden is quite some game.

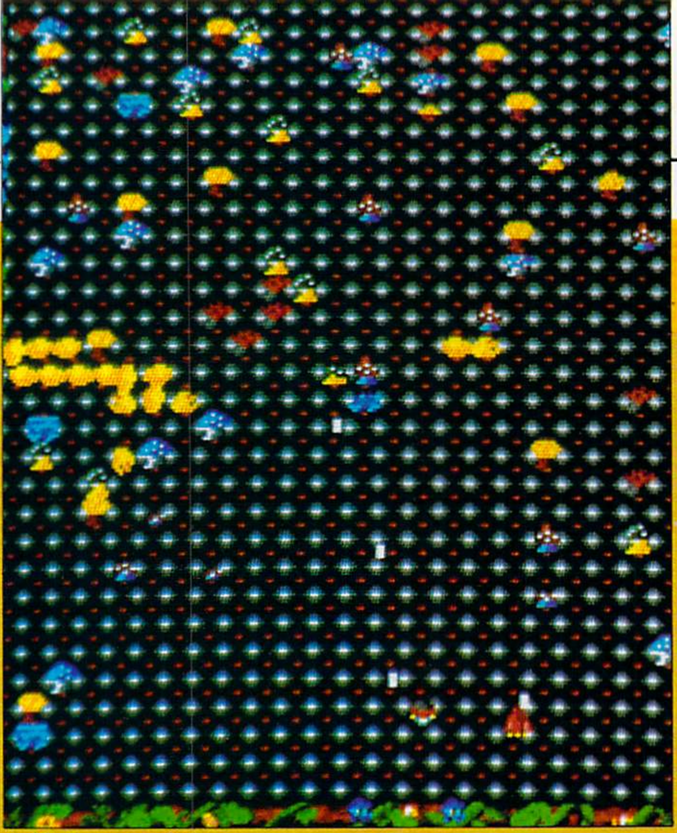
The learning curve has been set just right, so you won't feel left out at the start. What does worry me is that the last Centipede clone I saw cost £1.99. Although it didn't have half the prettiness, it had most of the features.

Stewart C. Russell

Evil Garden
£19.99
Demonware

Sound
Graphics
Gameplay
Value

Overall – 73%



Bad for the eyes or what?



Very pretty, but it takes ages to load

TOM AND JERRY

Downhill all the way

such as it is, takes place in various places about the house that are linked by Jerry's mouseholes.

The aim is to guide Jerry through rooms, over shelves and furniture, devouring as much cheese as possible within the time limit of 500 seconds. Tom is in hot pursuit and for every time he catches Jerry you lose 30 seconds. Jerry risks losing a lot more.

You can fight back by dropping books, bananas, bowling balls and other sundry items of cartoon mayhem on Tom and, when all else fails, you can escape down the nearest mousehole.

While inside the mousehole you have to dodge a series of explosive obstacles and traps at high speed, accompanied by a soundtrack that sounds as if it's played by a turbo-charged Russ Conway on a Bon-Tempi organ.

After about 30 seconds or so it all becomes very boring indeed, which is a shame because the concept is good and the graphics aren't bad. There must be scope for a good Tom and Jerry game somewhere. This one isn't it.

Mike Rawlins



Making a meal of a simple idea

Tom and Jerry
£24.99
Magic Bytes

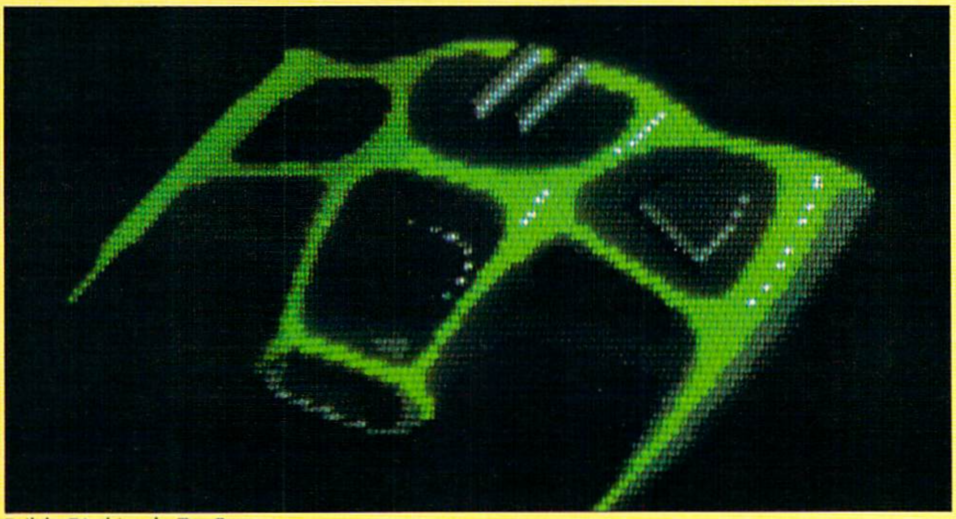
Sound
Graphics
Gameplay
Value

Overall – 51%

AMIGA COMPUTING Value

POWERDROME

Flying in the face of the impossible



Built by EA, driven by Tree Progs

COULD you never find anyone to put the cars back on the track for you when you were playing Scalextric? Did you ever wonder why moths beat themselves to death on light bulbs? The answer to the first problem – and perhaps the second – is now presented in the form of Powerdrome.

This is a very innovative implementation of the old favourite racing game, Pole Position. Where Powerdrome really takes off (pun intended) is that the cars have become jet aircraft which race around tracks resembling the M25 of the future.



Look what has escaped from Starglider

The track features bumps, bends, flyovers, tunnels, chicanes and, just when you thought it was getting mean, worse things which I won't even attempt to describe. It's more fun finding out for yourself.

The track is a kind of channel with banked sides, divided into equal chequered sections to give the sensation of speed as they flash past. They also serve as roadsigns.

If the embankment is coloured red and white there is a bend ahead, if the top of a tunnel is yellow and black then it is curving down ...

There are seven different tracks, each with its own set of interesting features which need a different style of driving to negotiate.

Hazards to watch out for are storms – complete with excellent lightning which impedes your engines unless you stop off in the pits for a change of filters – and the other drivers.

You have four opponents, each in a different kind of ship, who will all try to hassle you. Collisions are quite rare but can be nasty when they happen. Keep a look out in your rear-view mirror.

There is a very workable datalink option for playing against a similar minded Powerdrome owner communicating via modem or serial cable. The game thoughtfully allows you to copy it for this purpose.

If the unfortunate should happen and you prang a wing or, worse still, the nosecone, you can pop into the robopits for a speedy repair. Here entire sections of your ship can be replaced. You can even get a Quickfit



HELICOPTERS are not flown like aeroplanes. This is why choppers have their wings on the roof, spinning around at 280 rpm.

The angle at which the blades hit the air – known as the collective – controls the amount of lift. By using the joystick you control the overall tilt of the rotor blades – the cyclic – and this moves the 'copter forwards, backwards, left and right.

This is made easier on the Amiga by having an overlay which reminds you of the controls needed. Then there are all the weapons to control and select, because not only are you expected to fly the thing without crashing, but you have to shoot lots of people at the same time.

Before you climb into your $8m dollar chopper you select your duty assignment and determine the level of difficulty by specifying weather conditions and troop strengths.

After a short briefing you can decide whether or not you want to be chicken and call in sick. If you do choose to accept the mission, you have the opportunity to become a hero, earn medals and probably get killed in action.

Start the engine, engage the rotors, increase the collective, put out the cat and cross your fingers.

Gunship
£24.95
MicroProse

Sound	
Graphics	
Gameplay	
Value	

Overall – 47%



Catamaran's are legal in this America's cup

engine.

If you have the time you can pop back to the tune-up screen for a bit of adjustment – very handy in the practice laps. Occasionally you may have to refuel here during long races. All the repairs are accompanied by nice stereo sound effects.

Your ship is flown like an aircraft, rather reminiscent of Elite. Control may be mouse or joystick. The programmer seems adamant that mouse control is superior in terms of response time and it is recommended for the serious contender.

But although I tried very hard, it is similar to other mouse-driven games. Unless you have an A0 sized mouse mat and long arms, it's a bit difficult.

Additional controls from the keyboard include an overhead display of the track with all the participants marked on it, a readout of the current positions and a really useful timer which gives the difference between you and the lead car or the lag between you and second place if you are leading.

It takes a while to get used to the controls, so the programmer has included a "centre field" option, like a set of magnetic stabilisers which pushes you towards the centre of the track.

The field reduces your top speed, but it is fully adjustable, so you can gradually lower it as you feel more confident and more determined to beat the best lap times.

For those very special moments the Typhoon craft is equipped with afterburners – handy for excessive speed and reckless driving on long straights. Overuse of them causes the twin engines to burn out. If you use them in the tunnels you're racing towards an early grave.

The graphics are remarkable, wonderful and fantastic. Don't be surprised if you find yourself falling out of your seat as you try to take a sharp bend – good use of the blitter which suggests the programmer did a deal with Beelzebub.

The sound effects are some of the best I have heard. Wonderful stereo imaging and varying engine noises. Addictive, fast and professional, this must be the definitive racing game. As Frankie almost said: Welcome to the Powerdome.

Green

Powerdrome
£24.99
Electronic Arts

Sound
Graphics
Gameplay
Value

Overall – 91%



21st Century indy

GUNSHIP

Couldn't hurt a fly

After checking the map you can select your target and head off in the right direction. You have the usual split cockpit display with slightly more than half the screen taken up with dials and warning indicators.

The view out of the window is a solid 3D display, but not up to the standards we Amigans.

For a computer with such capabilities the landscape is bland and slow. Enemy planes are simple prisms which move casually past you. All in all it is very disappointing.

The manual, on the other hand, goes well beyond the call of duty with details about everything and anything.

Four battle scenarios and a training mission are supplied. These tastefully chosen war zones range from shooting communist guerillas in South East Asia to invading Grenada all over again.

Sound effects are satisfactory helicopter-type noises and simple biffs and bangs whenever things explode. The opening credits are well worth seeing and hearing – look out for them next time you are in a shop.

And give it a good test before parting with your money because my review copy, which by all accounts was a full release version, crashed several times.

As for realism, well I have never flown a helicopter, so apart from the crashes I can't be sure. Everything seems to be sensibly done, but after playing Gunship for a while I have no urge to actually go out and fly a helicopter.

John Kennedy



As warlike as ever

RUN THE GAUNTLET

Lose control of yourself

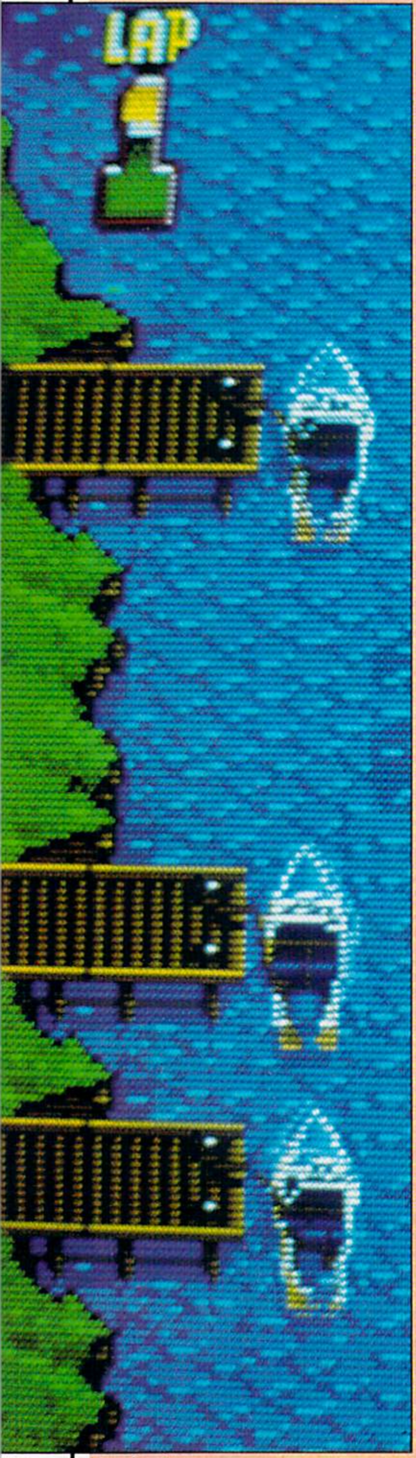
Run the Gauntlet
£24.99
Ocean

Sound
Graphics
Gameplay
Value

Overall – 43%

RUN the Gauntlet is a game played on an international scale with four teams from Britain, Holland, Australasia and the USA, all racing against one another in every type of motorised vehicle known to mankind.

The action starts by allowing you and a friend to choose one of the four countries to represent. The game will then select, apparently at random, a set of three special events for you to compete in. These are mostly three-lap races around a four-way scrolling landscape.



Henley, here we come

In the corner of the screen a small map is supplied to confuse and annoy you – it rather cunningly bears little or no resemblance to the actual playing area.

The computer controls the two other competitors in the race. You cannot play directly against your friend, and all events are scored by the time you took to finish. During the race the other computer players, whether boats, hovercrafts or cars, simply refuse to let you pass.

If you should bump into them, you will automatically go into a time-wasting spin. The computer-controlled boat will carry on as if nothing has happened.

Exactly the same thing occurs if they crash into you, which is not what you'd really go so far as to call fair. To make things even worse, some psycho is shooting at you.

Trying to steer your player around the screen is so difficult as to make play impossible. Just when you think you have got the hang of it, some prat will shoot you and stop you taking first place. Why? I don't know. I'm sure I would have remembered it if it had been in the TV show.

If you win, or least not come last, you will take part in the next event. If you are really unlucky you will win all three and take part in another series.

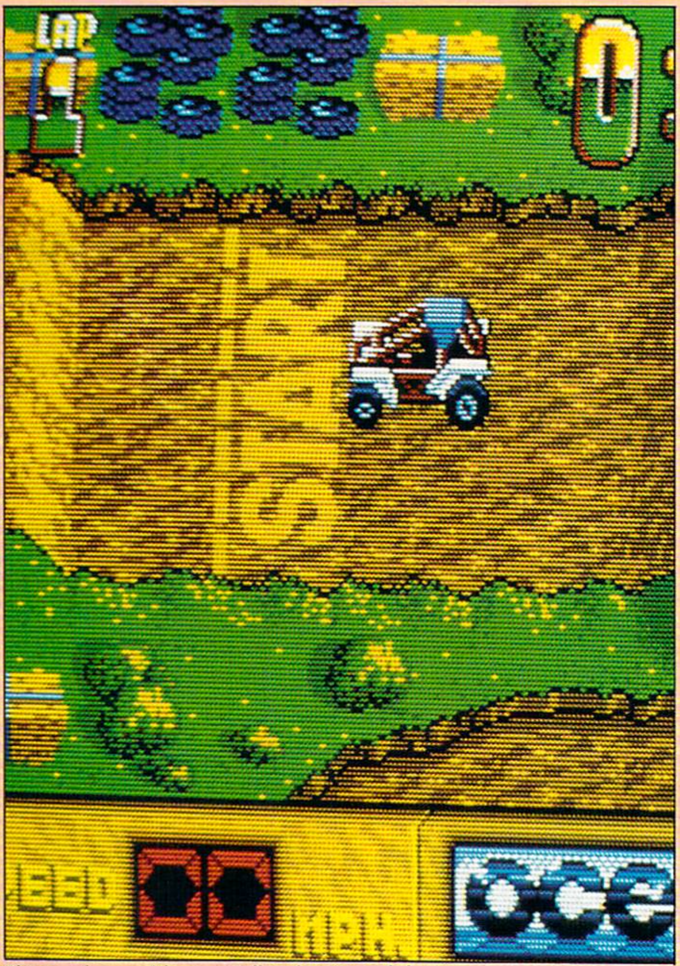
Graphically Run the Gauntlet is quite good. With digitised static displays plus passable landscapes and sprites, good use has been made of the Amiga hardware. Your little boat will even leave a shimmering wake as it vainly attempts to take part in the race.

However, the music must be the worst I have heard. A tedious little sampled ditty plays over and over and over again. Even the point when the tune starts and stops hasn't been blended together, so it sounds exactly like a record playing with a stuck stylus.

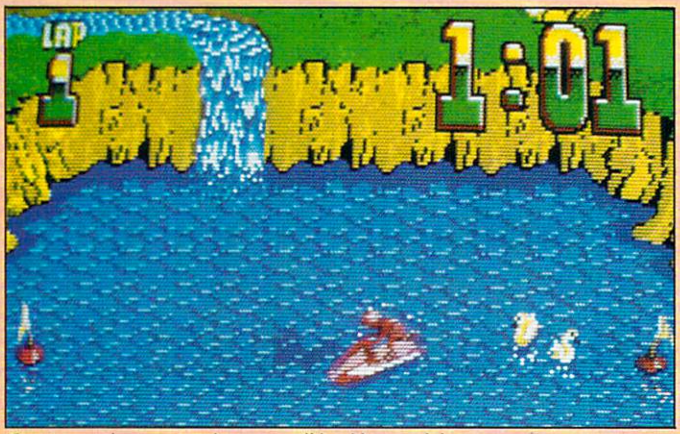
The only saving grace is 10 seconds of Martin Shaw sampled from the TV saying what a fun time you are going to have. Martin Shaw, if you remember, was the one with the curly hair from the The Professionals, a TV series banned because of excessive violence. His idea of fun is, therefore, to be treated with suspicion.

Run the Gauntlet must rate as the least enjoyable game I have ever had the misfortune to play. How Ocean managed to fill not one, but two discs with such tedium is a miracle of modern 16 bit technology.

John Kennedy



This must be one of these new toll roads we've read about



If you've got three eyes, perhaps you will be able to read the map

ZORK ZERO

The first and the last?

MEGABOZ the wizard, wearing a zap-me-quick hat, has cursed Lord Dimwit Flathead's Great Underground Empire. Your task is to remove the curse and claim a reward of half the wealth of the kingdom.

After casting the curse, Megaboz disappeared in a cloud of smoke, leaving behind nothing but a scrap of parchment. Written on the parchment, which is contained in the pack of goodies that comes with the game, is what you need to do to remove the curse.

The pack forms the nicest kind of protection system you will find. The disc itself is quite unprotected and can be copied easily. But without the pack you will never be able to complete the adventure.

One item is a Flathead calendar for the year 883 GUE. This contains all sorts of hints and tips such as: "Bottomless pits are the second-leading cause of death in Flatheadia".

Needless to say you have to negotiate a bottomless pit, but make sure you have a light or you might get eaten by a Grue.

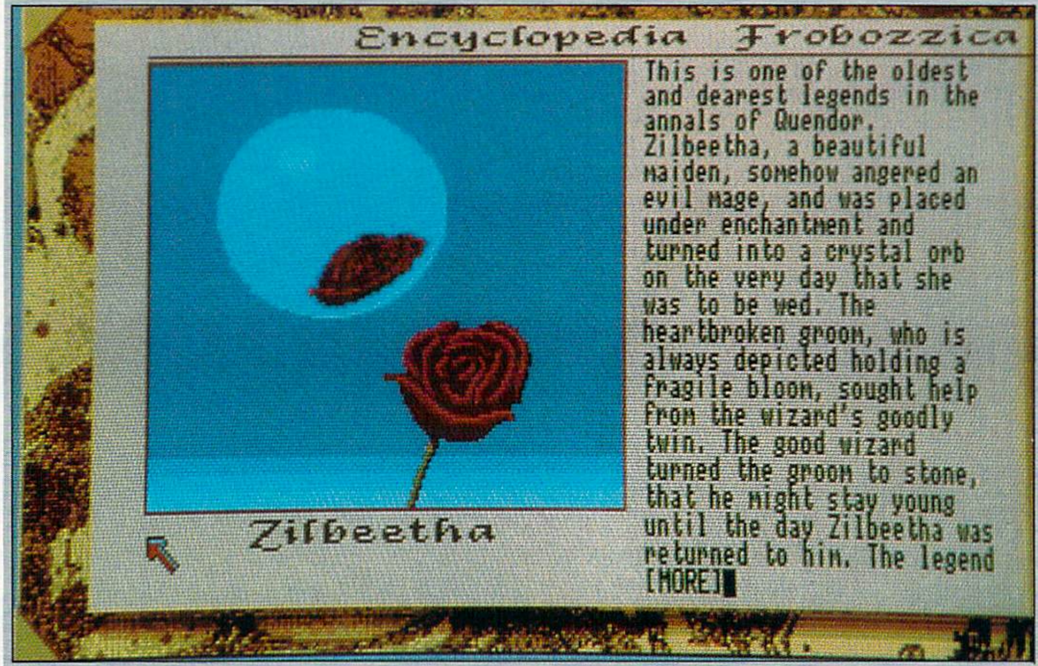
Grues are familiar things to anyone who has played an adventure written by Steve Meretzky, the 32-year-old New Yorker with a penchant for melted cheese. Who can forget his pizza in the toilet in Leather Goddesses of Phobos? Did *you* ever try to eat it?

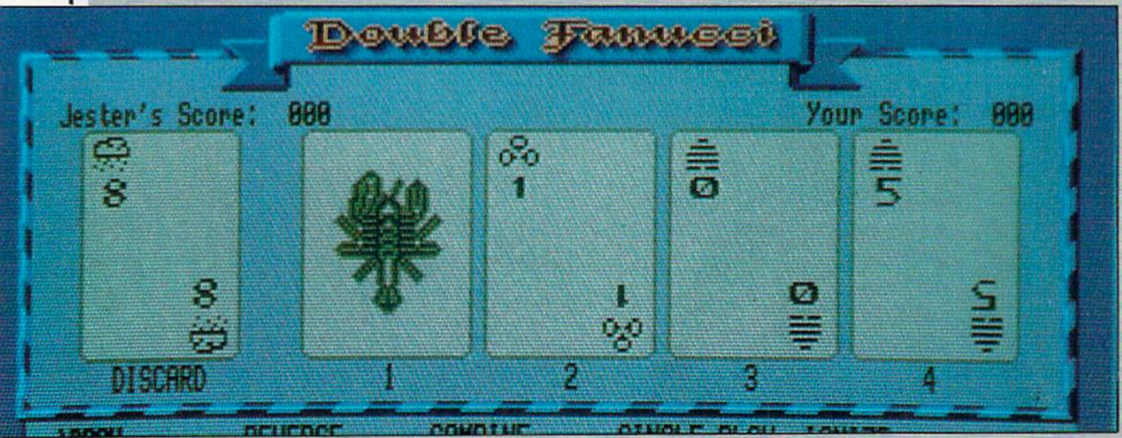
In Zork Zero Meretzky has written an adventure which is light hearted and at times excruciatingly difficult. It takes a certain type of mind to dream up some of the puzzles.

At one point you need to show the Jester something that has never been seen before and will never be seen again. The answer is to show him a walnut and then eat it. But to open the walnut is a different matter. With a magic wand and a lobster you should be able to find a way.

This is a new departure by Infocom into graphical adventures. The company always said it would never add graphics to games until it could do the job properly. In some adventures the graphics bear little relationship to the story, but in Zork Zero they are part of the puzzle.

There are several little games to play which rely on graphics. One such is Double Fanucci, a card game with weird rules. You play against the Jester. If the Jester discards the Three of Fromps, should you ionize your Two of Lamps or muttontate it instead? Don't forget, you have to *win* at this game!





To anyone who has played a Zork adventure the Jester will be a familiar character. He sometimes helps, sometimes hinders. He is fond of riddles and will often stop and give you one to solve. If you can't fathom it he will not let you pass. An example of one of his riddles is:

One night four men sat down to play /
They played and played till break of day /
They played for money; not for fun /
With separate scores for every one /
And when time came to square accounts /
They all had made quite nice amounts.

What were they playing? I'll give you a clue: They were not playing cards.

Graphics have been used to great effect throughout. At the top of the screen is a compass, so instead of tediously typing letters you can click on the direction with the mouse. This idea is carried further with an on-screen map.

Apart from adding graphics, Infocom has made improvements to the parser. It has always been a cut above the competition, but now it is even better with even more useful features.

One thing I am not too happy about is the on-line help. Type "hint" at any time and you can get full solutions to all the puzzles.

Infocom does suggest you don't make too much use of this feature, but it is all too easy to give up on a problem at an early stage. The first Infocom adventure I played – Planetfall – took me more than six months to complete; I finished Zork Zero in less than a week.

It is hard to criticise Infocom adventures. They are so good. This one could do with more graphics and a better plot. Nevertheless, I enjoyed playing Zork Zero very much and have no hesitation in recommending that you buy it.

Alex Aird

Zork Zero
£24.99
Infocom

Aura
Story
Graphics
Value

Overall – 87%

R-TYPE

Setting the benchmark



I think I'm gonna die

EVERY court case has two winners – the solicitors. R-Type is the result of another case where the losers won. Factor 5, a German software house wrote a scrolling shoot-'em-up called Katakis.

This was published by US Gold until Activision complained that Katakis looked too much like R-Type, a licence Activision guarded with zeal, as you would if you had paid Irem, the Japanese originators, lots and lots of yen.

US Gold had Katakis modified to look less like R-Type and called the result Denaris. So Factor 5 wrote two games which looked pretty similar. But the best was yet to come. Katakis was such a good R-Type ripoff that the Germans were chosen to produce the official version.

They have done a brilliant job.

Purely in the interests of research I visited an arcade to check out the original. I used not to be very good at R-Type, but after three days' intensive practice on the Amiga version I sailed through the first two levels of the arcade version.

Friends in the arcade were well impressed. This reveals two things about the conversion. First, the timing and feel are spot on. Second, the Amiga version is much harder than the coin-op with standard settings.

Increased difficulty is no bad thing. At 20p a go there is a strong disincentive to practice. If you've shelled out 100 times the amount and then all the games are free, you'll play until your fire button finger is sore. Then you will play some more.

The programmers clearly know and love the Amiga. The game oozes slickness. Graphics are not quite up to the money-munching original but they are pretty close.

Speed does not seem to be affected by swarms of encroaching aliens, the massive end-of-level guardians nor your unleashing megatonnes of death by building up loads of weapons.

Pick up a shield, ripple lasers, side firing lasers, seeking missile and some side shields and no enemy poses a real threat. But if your finger slips on the sweaty trigger and you lose a life at a crucial moment, it is still playable.

Dedicated gamers will argue that if you lose extra weapons early you might as well give up and go back to the start. This takes some patience because you have six credits and the temptation is to use them regardless of tactics.

A well-programmed conversion of one of the best games in the arcades is the most you can hope for. The music doesn't grate, neither is it great, but the result is spot on.

Denaris may be a better game for its deviation from the original, but R-type is the benchmark by which other games of this ilk must be judged.

Simon Rockman



In five seconds you will be heartbroken

R-Type
£24.99
Electric Dreams

Sound

Graphics

Gameplay

Value

Overall – 86%

EVERYBODY must have at some stage in their life watched a film and wished they could be the hero. Well if your hero is the same as mine, Godzilla in The Beast That Ate Tokyo (b/w 1949), your hour has come.

Rampage puts you in the role of one of three towering monsters: a giant King Kong type, a vastly oversized werewolf or the old favourite Godzilla. What is your objective? Simple – smash, maim, kill, destroy, obliterate ...

Each scene begins with our assembled heroes on the pavement outside some suspiciously fragile-looking buildings. Do what comes naturally. If you find it hard to get motivated into all this anti-humanitarian destruction, think of what destruction on this scale will do to all the estate agents and insurance salesmen.

When the place is completely decimated you move on to the next town – of which there are 738, all the way from Peoria to the dark side of the moon.

In an effort to prevent you from turning the civilized world into a Beirut lookalike the Army has positioned SWAT teams in cunning vantage points from where they assault our metamorphic monsters.



Hey, Harry, what's your pet monkey doing on the roof? Well, they told me it weren't allowed in the flat

RAMPAGE

Sure to be a monster hit

Rampage
£24.99
Activision

Sound	
Graphics	
Gameplay	
Value	

Overall – 61%

King Kong will have more to deal with than a few pathetic biplanes this time as a few helicopter-gunships enter the fray, straffing wildly.

Later tanks appear with more advanced firepower, which can cause a fair amount of pain judging by the expression of the stricken beast.

Each hit you take may not inflict much damage, but it all adds up. The only way you can make up for this is by eating regularly. What do you eat? Well, as you are climbing the sides of buildings, smashing as you go, you may notice that some kind people have left out some food, milk, toast or even their goldfish for you.

If they haven't, that's OK because you can always eat the people and have a few choppers for dessert.

Up to three people can play at a time, though using the keyboard is verging on the impossible. If the players are not friends, you will be pleased to know the monsters can beat each other up as well as the buildings.

There is not much by way of a plot, it's just mindless destruction, which is perhaps is more honest than many games on the market that try to dress up violence, destruction and general bad behaviour as being brave and noble as long as there is a cause to be championed.

There is no "fight the good fight" here unless you're in the Animal Rights Militia. There is a small amount of romance though. Occasionally a girl will appear in one of the windows. She can be rescued for extra points. You can eat her afterwards, of course.

Graphically the game is very pretty and the animation of the monsters is excellent, from the defiant growl and shake of the fist to the way they cover their eyes when they fall off a building.

Sound is adequately supported. There are some nice stereo effects with the toppling buildings and a satisfying chomping noise when the beasts tuck into a human.

Green



TRAINED ASSASSIN

The killing screens

Trained Assassin
£24.95
Digital Magic Software

Sound	
Graphics	
Gameplay	
Value	

Overall – 95%

ONE of life's more cuddly ironies has to be the arcade conversion. We spend many hours and pounds for the thrill of seeing our initials on the screen in a (possibly) rather dodgy establishment. After a while we dig out some more cash to spend on the home computer conversion, which we batter away at for a few days.

All we get to keep is our initials on the screen and a very short-lived hit of adrenalin. The other parties involved get our money in large quantities. Who gets the better deal? he asks in a concerned Channel 4 consumer programme kind of a way.

Because conversions cost publishing houses a lot of money, wouldn't it be cheaper to nick some good points from popular games and add a completely flimsy to the point of being see-through plot?

Wouldn't Robert indeed be your parent's sibling? Ah, but games like that are easily found – in the bargain bin, at the back of the software drawer, in a skip...

Without polish or class, or at least some good honest hype, more money is lost than saved.

Currently, Digital Magic Software – or DMS to those who want to sound in with them – are doing with arcade games what Frankenstein did with dead bits, although with a slight difference. Frank took the best bits but kind of spoiled them all when joining them together. DMS takes good ideas, stitches them together with good coding and the joins are nowhere to be seen.

DMS, to use another tedious analogy, are the Classic Car restorers of the computer entertainment world.

Trained Assassin has got more arcade elements to it than a fan heater on Brighton Pier. On the lowest level it's a scrolling shoot-'em-up with add-on weapons; no chocolate watches awarded for originality.

It's got five levels. "Zz zz zz," comes the reply. It's got a tiny plot, all about destroying King Rhizoflagellates and creatures "whose touches are fatal". With one mighty, apathetic accord, humanity manages a deafening "   !" Not very impressive sounding, is it? But read on.


Tim White caught in pixels

There's a fair amount of money in the trained assassin business; there's equally as much in the untrained assassin business, but it goes to the next of kin. There would certainly need to be big cash involved to face King Rhizoflagellates's hordes of nasty things, all of them with more kick than an uprated onion bhaji.

The standard weapon deals quite adequately with the first few waves, but things very soon get out of hand. You'll need the laser and the orbiting-buddy weapon to even think of getting rid of them.

Each stage can be learnt; in fact it's vital to do so because some bits are dead ends and you get crushed by the relentlessly scrolling scenery. There isn't as much scenery as you'd expect in an arcade machine, but there's certainly enough to get in the way.

The first level has slightly futuristic bits all over the place, like a simplified R-Type. It's fairly predictable once you learn where to go and what not to do and ends with a fairly traditional Big Nasty Dragon. It serves as a good warm up for the rest of the game and has enough initial wow-value to keep any gonzo arcadist happy.

The second level scrolls down the way, which causes some problems because your main weapon shoots horizontally. It has bubbly scenery, not dissimilar to Starquake, the old 8 bit Bubble Bus classic. It is extraordinarily difficult, far more so than the third level, and could spoil the game if you can't suss what to do.

Level three has a desert-cum-ancient Egyptian feel to it, but has the added twist of seemingly solid scenery, which can only be got past once shot.

It's a good level, loads of traps for the unwary and just as many for the fully clued-up. It scrolls horizontally but, unusually, from left to right.

Level four isn't for the weak of stomach, nor those who have eaten within the previous hour. It's got flying eyeballs, leaping protozoa, and tracker tumours. This has got to be one of the most tasteless levels of a computer game I have ever seen, but is a difficult blast because the scenery moves upwards. Me, I nearly lost my lunch.

The final level is everything a final level should be; excruciatingly difficult, but with features learnt from previous levels. It is uncomfortably similar to R-Type and more difficult than all the other levels put together.

When you cop it – notice the "when", not "if" – you get put back to the very start of the level; a pest, but you should have learnt what you did wrong and will be able to avoid it next time.

The team of Burt on coding, Derrett and Law on graphics, and Harris on sound has made Trained Assassin a very fine game. Better, even, than the last DMS offering, Scorpion. Everything moves quickly and smoothly without fuss or flicker.

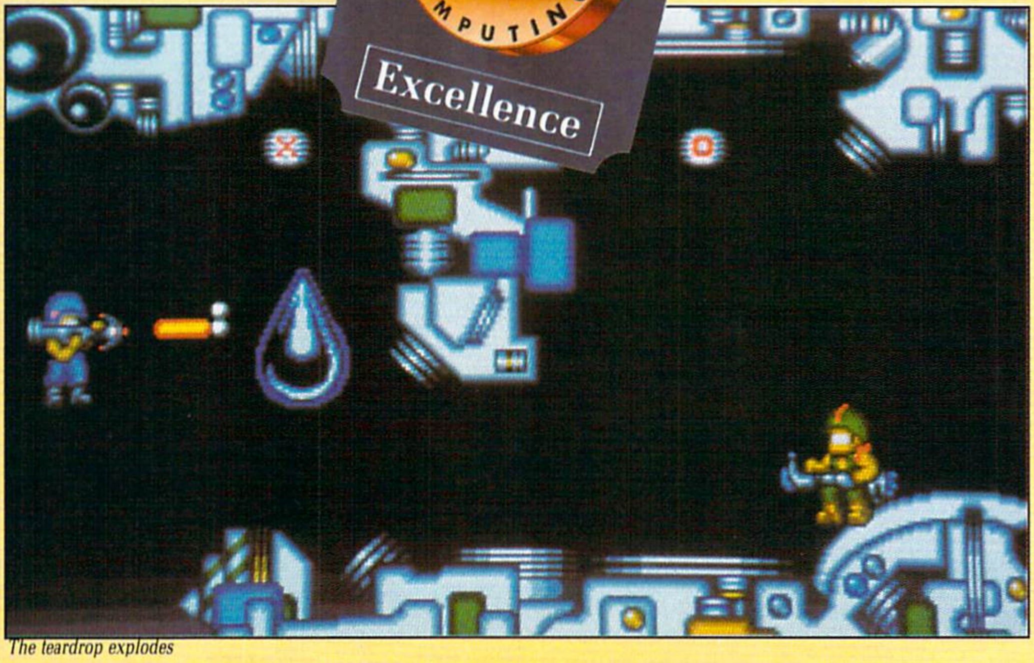
The presentation is much better than in Scorpion, with a very nice Tim White illustration on the box, poster and title screen. The effects, although loud and atmospheric, aren't much more than OK. The same cannot be said for the title tune, which even manages to sound good through headphones.

I appreciate that rather one-dimensional scrolling shoot-'em-ups may not be everyone's pot of Darjeeling, but Trained Assassin appeals to me.

It doesn't say anything new, but it is of a standard that could probably survive unaltered in a real arcade. As good as the Amiga is, few games could manage that.

Stewart C. Russell

Amiga Computing Excellence


The teardrop explodes

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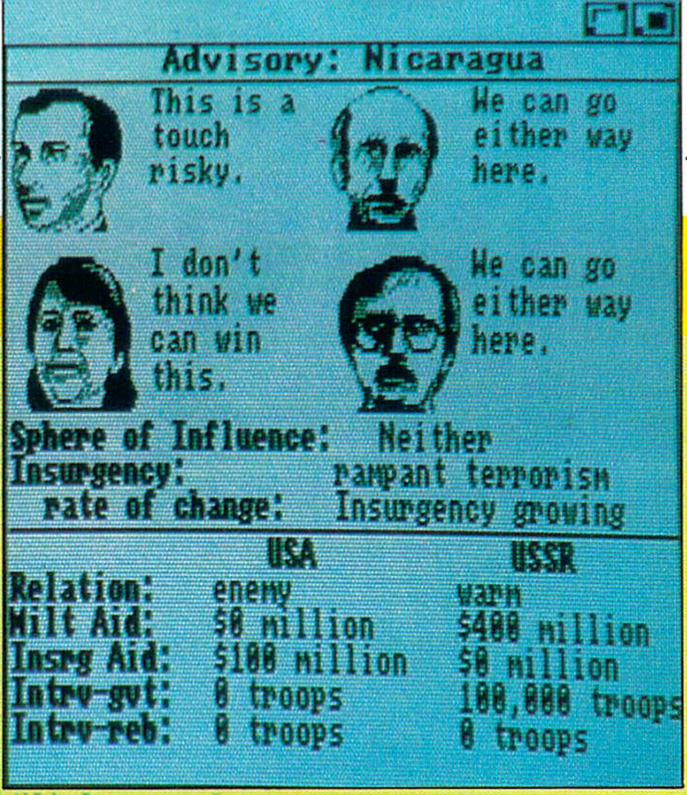
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S.T.A.G.

The bin's too good for it

APPARENTLY in the year 2567 Earth gets destroyed. A big shame. Some survivors, who presumably had been out walking the dog at the time, decide to set up a trading company. They plan to exploit the alien worlds, all of which have less sense of economics than Nigel Lawson. With a small cargo ship they ply the spaceways trying to con anything they meet.

This is the plot to Stag. It seems a little familiar, right? It sounds a little like Elite, doesn't it? There is a subtle difference though. Elite was good. It had animation. It had gameplay. Above all, it was fun. Stag, on the other hand, is pathetic.

It has been semi-converted from a German game. I say semi-converted because it is only partly translated into English. A few things have been left out. Like grammar. And sense. It doesn't really matter – you don't have to understand it to realise how terrible it all is.

Another stunning concept is that the game is completely mouse driven. In itself not very original, but the underlying philosophy of making it completely impossible to do anything without having to make 67 factorial button presses and generally work the ball off your mouse is.



I expect EAS will be bringing out a mouse-only text adventure next. Or perhaps a word processor where you choose your next phrase from one of 8,000 icons.

Trading means haggling with strange creatures over a limited range of goods. When I say haggle I mean it in a strange new sense of the word where you tell the other bloke his price is way out and he tells you to go away. Not much scope for Thatcherite entrepreneurial acumen there.

You are not given information about any of the other planets, so it's pot luck whether they actually want the stuff when you get there. Oddly, the entire galaxy lives on a diet of milk and alcohol. Perhaps they listen to too much late 70's rock music.

The space flight sequence is the best part. This does not mean it is good, it's just better than the rest. Does the ship glide silently and majestically through stardust panoramas? No. It flies though squares. Or space-streets as EAS would have it.

It's very reminiscent of Mastertronic's Chase, which can only be bad news. If the ship hits the sides it loses shields and eventually disintegrates. Amazing.

Sometimes pirates attack your ship. You will know when this happens because you will suddenly stop flying through squares and some text will appear telling you that some pirates are attacking your ship. Just as well. You would never work it out otherwise. Some small blobs appear on the screen. They get bigger. You die.

Amazingly EAS has password protected this offering. Perhaps the company reckon software pirates are as stupid as the ones in the game. If anyone is doing a bit of shady dealing here it is EAS trying to offload this lack-lustre effort for twice the price of the original Elite.

Green

S.T.A.G.
£24.95
EAS

Sound
Graphics
Gameplay
Value

Overall – 11%

Value

HERE we have one of those games where even the Amiga's sound chip wouldn't be good enough. You need a recording of Ride of the Valkyries (Wagner's Ring Cycle, Deutsch Gramaphon) and the urge to destroy your fellow man. Ah, the fun of world domination at the click of an icon.

A well written manual takes you from clumsy amateur to world psychopath in gentle stages. One or two can play, with the option to be the American Eagle or the Soviet Bear. The computer is a good opponent.

There is no blood, gore or offensive language; no smutty pictures or blood curdling screams. This program looks at the academic side of war and peace and reacts well to player input.

The initial simple settings guide you through a predetermined set of moves to show what effect different decisions will have. After this you get to try out the various menu options. A wrong decision could accelerate you to Defcon 1 and the chance to wipe out the entire planet.

If perchance you do cause thermonuclear global conflict, a simple text

SOMEBODY somewhere is doing a rather nice line in hot motors. The FBI want this stopped. The annoying thing is that the felons are corrupt policemen who can bring the law to bear on anyone they take a dislike to.

So those awfully nice FBI people have called you in and given you an F40 with a neat line in bolt-on goodies.

You must drive across four states before the corrupt policemen roadblock all the exits. Your onboard computer will tell you which freeway exits to take, but won't know if the way is blocked or not.

Crazy Cars II
£19.95
Titus

Sound
Graphics
Gameplay
Value

Overall – 43%

The radar detector can tell where the nearest police car is and can be used to check for roadblocks. It's also very handy for keeping clear of

BALANCE OF POWER

Let's not beat about the Bush

Balance of Power
£24.99
Mindscape

Realism
Strategy
Gameplay
Value

Overall – 88%

screen tartly informs you that there will be no animated mushroom clouds. There are no rewards for failure.

I can't stop playing Balance of Power. What started as a few decisions about whether to drop troops or dollars somewhere has escalated to form a habit. The further I get, the more I want to do.

There is always something new around the corner and the inclusion of 80 countries, all reacting independently, means that there is no chance you will exhaust the possibilities. If you get stuck, a crisis advisory service appears at decision time and gives you a clue as to which way to turn.

You start in 1989 with a reasonably stable planet. If you can maintain stability the game can last eight years, after which the winner will be the side with the most prestige. I've played solid for 14 hours and couldn't last longer than three years. Then again, I always was quick on the button.

To help you to decide whether to give a country aid in cash or troops, a screen lists the political persuasions, stability and stuff like that. If you are playing as the good ol' US of A and you give too much help to neutral Sweden, uncle Gorby gets a tidgy bit miffed and puts you in a precarious position. Ouch.

I started at the beginners' level and worked through intermediate and expert. As I went up each level and the amount of factors that the program used got more complex, the results I got began to mirror history.

There's nothing like a bit of realism, so I got out the history books and looked up a couple of the more delicate diplomatic situations from the 'sixties, when the Bear and the Eagle were at each other's ambassadors.

I couldn't hope to simulate them accurately, but the basics were there. Using the world as a three-dimensional chess board, I made the USA moves to see how the USSR would react.

I then reversed the roles and played the USSR. As both superpowers had blamed each other for the initiative in the 'sixties, it was interesting to note that the only way to get a similar result was to cast the USA in the role of aggressor. Tut-tut, President Johnson. And you said it was them.

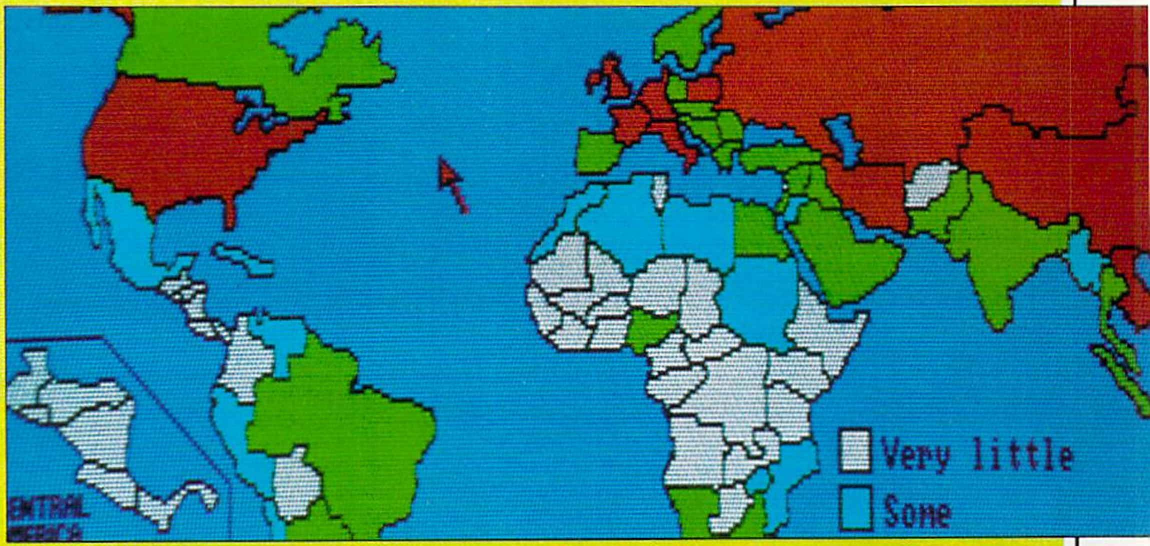
In the levels up to expert the game takes the rather simplistic us-and-them stance. It only calculates the reactions of the two main powers and anything else brought into direct action.

In the final multipolar level Balance of Power gets closest to reality with the computer calculating the reactions and decisions of all 80 countries.

In fact it's quite uncanny. The results at this level were accurate enough to write a newspaper article which wouldn't have looked out of place at the time.

If this sort of simulation can get so close to actual events, perhaps we should send Bush and Gorby an Amiga each and let them get on with thermonuclear war in the comfort of their own palaces.

Keith G. Pomfret



Watch out for the China crisis

CRAZY CARS II

One to steer clear of

honest policemen, who take extreme exception to the speed limit being exceeded by 145 mph.

The FBI has rigged the engine to explode if you don't make the checkpoint in the set time.

The engine also happens to explode if you hit anything – car, lamp-post, bollard – or travel too fast for too long off the road.

And that's all there is to it.

CC2 is difficult and very frustrating. It must be the only game to give a car inertia – it becomes very easy to spin uncontrollably at high speed.

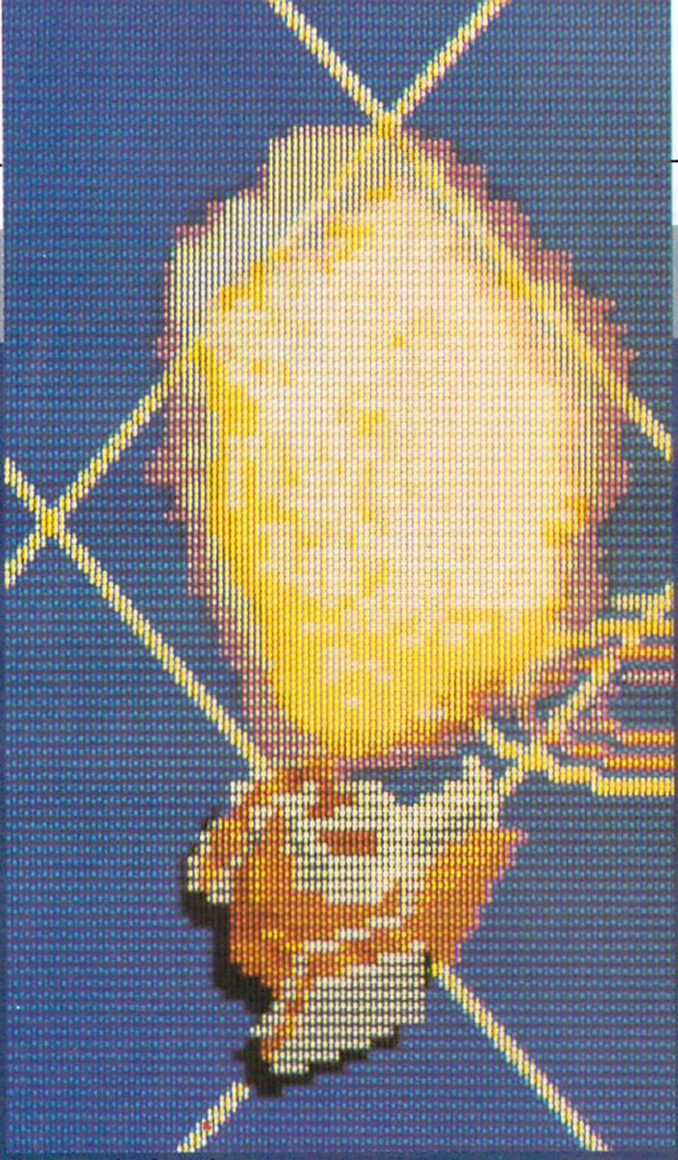
What Titus hasn't put into the handling is the natural way steering wheels return to their centre position.

I don't know how Titus can keep a straight face when it claims that the screenshots on the box are the same as the graphics in the game. They're not, they are re-touched saved screens, not ones from the game.

With the handling of an elderly 2CV, the sound of a sewing machine, and graphics which wouldn't be noteworthy on the machine which starts with an S and ends with a T, Crazy Cars II will appeal to somebody I'm sure. Possibly one for a connoisseur of the truly mediocre.

Stewart C. Russell





That was too close for comfort

Vindicators
£19.99
Domark

Sound	
Graphics	
Gameplay	
Value	

Overall – 68%

HERE'S a surprise – a fleet of hostile space stations is loitering with intent just 53 miles west of Venus. The burghers of Planet Earth are getting understandably hot under the collar. It's a good job, then, that they've just developed a mega battle tank, the SR-88 Vindicator.

Let me guess which patsy has been volunteered to drive the thing: Merv Klein from Athens, GA has just sawn his leg off for charity, so you're the only one qualified. What a surprise.

Once through the Van Allen belt you get a chance to check out your dinky little engine of destruction. Despite its jaunty paintwork and rotational controls, this jalopy packs quite a punch.

If you're not too familiar with the vehicle, Mission Control suggests you take on the first station because it is entirely staffed with nerds. Stroll in, knock off a few brainless tanks and gun emplacements, get the key and exit to the next level. Easy.

The staff are so stupid that they've left all their Action Man stars lying about, ripe for the picking. Collect enough of these and you can choose new bolt-on goodies when you go back to your ship. The best ones to get are the Increase Shot Range tokens, which allow you to take out things before they do the same to you.

As with the arcade original, these tokens are cumulative, so it's relatively easy to upgrade your tank to something fairly intense. Some Smart Shots can come in handy, especially when things are getting out of hand.

Once through to the top level your task is to destroy the control centre, which can be a valuable source of bonus bits if you don't mess up and get trashed with the rest of the centre.

If you choose to play this the two-player way the dominant player can

DARK

Challenging alien

Dark Side
£24.95
MicroStatus

Sound	
Graphics	
Gameplay	
Value	

Overall – 64%

WELCOME to another adventure using the Freescape 3D environment, Dark Side, the successor to Driller, set 200 years later. It stars those enemies of the Evath, the Ketar, in another bid to destroy life as we know it.

It all started with a probe passing over the dark side of the moon Tricuspid detecting a plexar just before being destroyed. A plexar is a giant construction designed to fire a high-energy particle beam at Evath, blowing it apart. It is fed by Energy Collection Devices – or ECDs – which resemble crystals atop poles.

Your mission is to destroy the plexar, but more immediately you must starve it of energy, thus slowing down the countdown to the time of firing.

As soon as you see an ECD, shoot it. If it is in a line of others it will re-charge immediately, so the devices aside it must be destroyed first. Other things to worry about are the Plexors, which are tank-like defenders, the slab-like power porters and the telepods, which must be activated by hidden crystals.

You start in a sector of the moon guarded by a plexor and decorated by a few tree-like constructions. Moving forwards in full 3D, the first objective is to avoid the plexor and penetrate the next sector where you can destroy an ECD.



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And not a Floyd quote in sight

VINDICATORS

Tanks, but no tanks

nick all the good bits, leaving the garbage to the other sucker. You people wouldn't do that, would you?

Once you've endured the tacky spaceflight scene, and man is it tacky, you get to the next space station, which has a few less nerds and loads more tanks. In fact, tanks a million! (Spike Milligan's the one to blame for that one.)

The graphics are, as they should be, totally faithful to the arcade, with all the right things appearing at the right time. The sound is exceedingly faithful to the arcade as long as you are used to hearing it through several layers of old socks. It's fuzzy and frankly it stinks.

One small problem surfaces when large amounts of scenery start appearing. The durn thing slows down to a snail's pace because the programmers felt they had to use software sprites to achieve the desired effects.

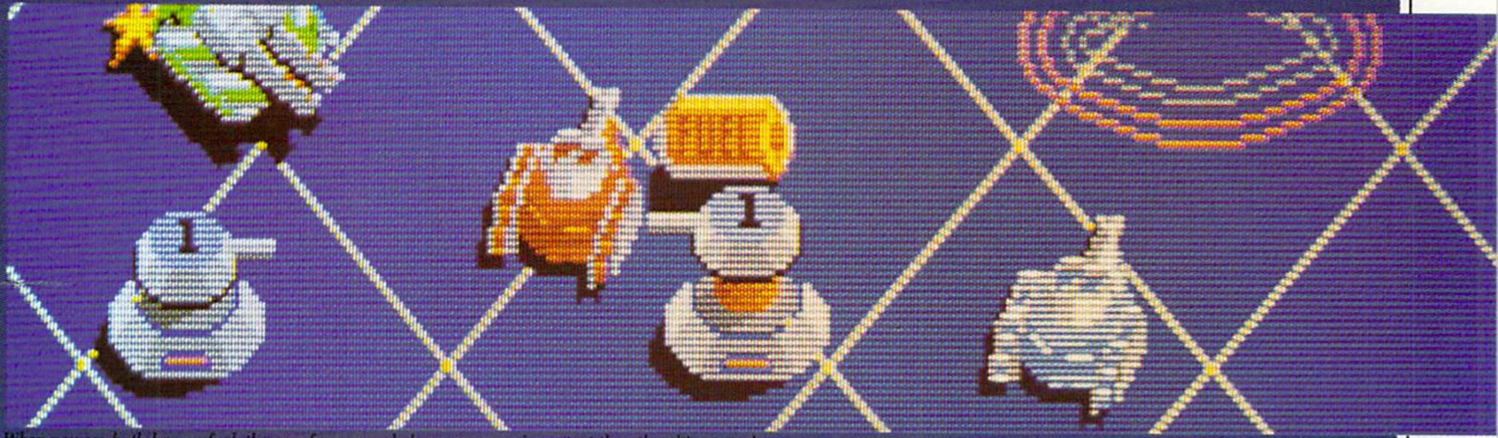
Hmmm, they probably had to use a 200 line screen for the desired effect, too. And that desired effect, dear readers, is to make the Amiga conversion a quick job after the ST one. The programmers claim memory problems.

Don't get me wrong. Vindicators is an exceedingly playable game that stopped me toying with Daleks for a while. The graphics are good, it's just that when things start getting sticky they also start getting slow.

The B52 board – that's what's in the A500 – is capable of a lot more than just a bare 68000; the conversion is faithful, but not well done.

If Domark hadn't cut corners, Vindicators would probably have got an Excellence gong. At least we haven't been charged an extra fiver for a poor ST port.

Stewart C. Russell



When you are both low on fuel, the race for a capsule becomes more important than the ultimate task

SIDE

environment

Come back then and enter a building which houses stores of shield and fuel materials. Getting into the building is easy since the demo mode shows you how to do it.

Although it feels like you're driving a tank, you are actually in a spacesuit and can look up and down, tilt the angle of perspective, even fire-up your jet pack. The trouble with these movements is that they are fairly laborious.

Movement forwards and backwards is relatively smooth and fast, sideways movement is very slow and jerky. Considering that only around half of the screen is being used, this is disappointing.

The jet pack activated, take to the sky – or what passes for one – and zoom into the buildings, down the corridors and round the constructions in search of crystals and ECDs.

While some situations are familiar – corridors in buildings and surface features outdoors, for example – some of the features indoors are very strange and infuse a sense of something completely alien. Very unwelcome to the eye. Plus it's difficult to figure out what is what.

The sound effects are goodish, but there aren't enough of them. You'll soon tire of seeing and hearing the plexar destroying Evath every time you blow your mission impossible.

Nevertheless, Dark Side is a challenging and worthy addition to the Freescape stable. It is slow and thought provoking and will certainly be welcomed by devotees of the 3D arcade adventure. But be warned, it isn't everyone's cup of tea.

Duncan Evans



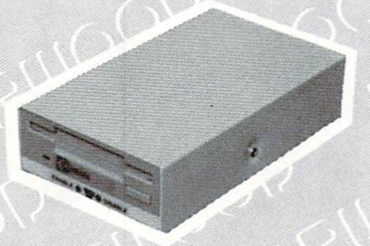


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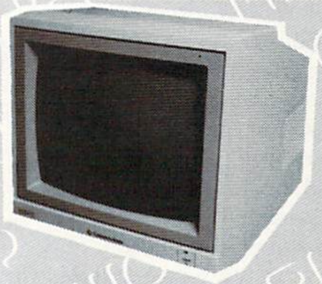
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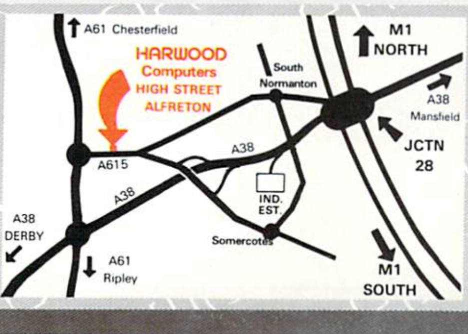
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Under the Workbench

Setting up a hard disc can be very confusing as you juggle file systems, formats and manuals. David Foster shows the path to take

WHY is life never simple? When I bought my Amiga 2000 I specified a hard disc and Workbench 1.3. When it arrived, the disc was already formatted with a Workbench boot disc set-up. The only trouble was that it was installed with Workbench 1.2. As I wanted to use 1.3, the only solution was to start at the beginning, re-format the disc and re-install Workbench.

Commodore, largely because of poor documentation, has a knack of turning simple tasks into epics of trial and error. The Workbench 1.3 manual is an improvement, but you now have to flip between it and the 2090 hard disc controller guide to decide which bits are relevant. Two or three pages in Appendix A of the Workbench 1.3 manual cover hard disc installation after a fashion.

One of the drawbacks of the A2090 hard disc controller and the Fast Filing System (FFS) is that the whole disc cannot be formatted as a FFS disc because the A2090 automatically attempts to mount the first disc partition as an old filing system (OFS). This has been fixed with many of the more recent interfaces such as the Commodore A590.

The solution is to partition the drive into two logical drives, the first of which is formatted as a standard drive, called DH0: the other formatted as an FFS drive. The procedure is quite straightforward, or it would be if you didn't have to dig the information out of two or three different places.

If your hard disc is already formatted and contains any data the first thing you should do is back it up on to floppy because the process of installing the FFS destroys all data.

Understanding the procedure carried out by AmigaDos to initialise the hard disc for use might make things clearer later on. AmigaDos automatically mounts the floppy as DF0:, because BindDrivers, one of the command lines in Startup-Sequence, has built in drivers for DF0: and, if a hard disc is present, it attempts to mount a hard drive called DH0: as a standard hard drive.

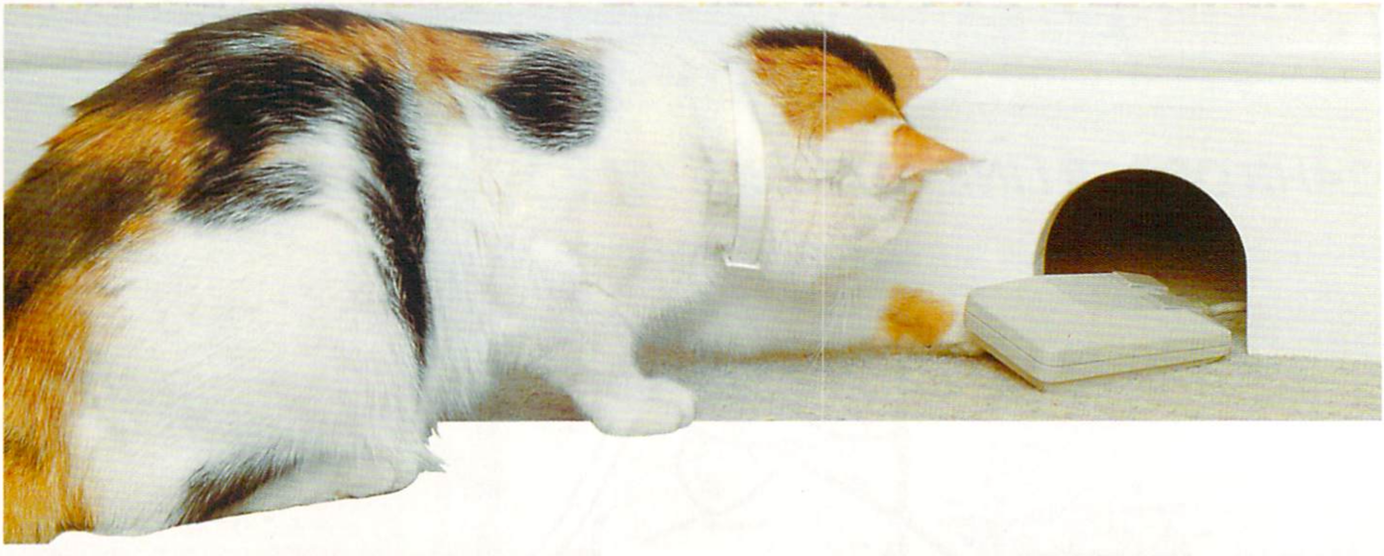
If you add any further drives, or partition the hard drive into a number of logical drives, you must tell AmigaDos that you have done so. This is done by making entries in Mountlist and then mounting the drive.

Mountlist is a text file and may be edited with ED, or any Ascii text editor. The layout of the entries follows certain rules. You will find that sample entries are already included which need altering or duplicating to suit.

Just making entries in Mountlist does nothing and you have to mount the drive with the Mount command, using the name of the drive involved. Mount FS1: would mount the drive defined as FS1; in Mountlist. You can use Mount commands from the CLI, but would normally put them into the Startup-Sequence.

Once mounted, the drive is ready for use, but its icon is not displayed until the drive has been accessed with a command. Just CD and the drive name is sufficient.

Make copies of the Workbench 1.3 disc and HDInstall disc – never use the originals – then switch off and re-boot the computer from the copy of Workbench 1.3. Make a copy of the



Mountlist file in the Devs directory of the Workbench disc with a different name so that if you get things wrong it is only a second's work to copy it over the messed up one and start again. You are now ready to begin the real task.

Insert the copy of HDInstall into the floppy drive and click on the disc icon, then double click on the Install icon to load the program. The first thing you get is a warning about the procedure completely clearing the hard disc of existing data.

PLUCK up courage and select Yes to continue. The program will check Mountlist and copy the hard disc driver and other files on to the Workbench disc. There is a final chance to escape just before the program does anything more than copy the necessary files on to the Workbench disc.

You are then asked whether you are using a SCSI hard disc. In most cases the answer is No unless you have specifically requested such a drive and the program then asks whether the first ST506 drive should be Prepped. Answer Yes. The purpose of Prep is to specify the type of drive and its specifications. It must be run to prepare the hard drive.

A list of drive types appears for you to select the one you are using. Things are not always as obvious as they seem. My drive is an Epson ST506 type, but the Epson entry in the list was for a SCSI drive. If you are unsure, check with your dealer. If your drive is not on the list select option 0 for a User Defined drive and answer the questions.

The first few questions are about the drive's specification. If none came with the drive you might have to ring the supplier to check. I did so, to check that mine was, in fact, a bog standard one of the type used by many IBM PC computers, with four heads, 615 cylinders and 17 sectors per track. The required answers to the questions are shown in Figure I.

You are next asked for the last cylinder being used by the first partition of the drive. AmigaDos takes cylinders 0 and 1 for its own purposes, which means that the lowest cylinder of the first partition starts at 2.

AmigaDos automatically installs the first partition as DH0: All that Prep needs to know is where the first partition ends. Prep already knows that it starts at cylinder 2. I decided to

```
HardDisk
New CLI task 3
First time hard disk installation.

Warning: this procedure will clear your hard disk.
Your Amiga must be rebooted at the conclusion.
Do you want to continue ? [Press RETURN to exit]  y

Checking your MountList.

Copying hddisk driver into your Expansion drawer.
    RAM DISK:HardDisk/hddisk..copied
    RAM DISK:HardDisk/hddisk.info..copied

Copying Prep command into your C directory.
Loading driver

Mounting hard disk and initializing hard disk.
Is this a SCSI hard disk ? n
Can't cancel dh0
PREP the first ST-506 drive (DH0:) ? (All info on DH0: will be erased) y
Device RES0: already mounted

PREP Version 33.19

Drive types:

  0) USER DEFINED
  1) Generic 2 head 10MB  (ST506)
  2) Generic 4 head 10MB  (ST506)
  3) Epson HMD-726A       (SCSI )
  4) MiniScribe 3425/8425 (ST506)
  5) MiniScribe 3650      (ST506)
  6) MiniScribe 8425S     (SCSI )
  7) Quantum Q280         (SCSI )
  8) Rodime RO 652        (SCSI )
  9) Seagate ST225        (ST506)
 10) Seagate ST251        (ST506)
 11) Seagate ST138N       (SCSI )
 12) Seagate ST157N       (SCSI )
 13) Seagate ST225N       (SCSI )
 14) Seagate ST251N       (SCSI )
Select drive type [6]: 0
Number of heads [4]: 4
Number of cylinders : 615
Number of sectors per track [17]: 17
Write pre-comp cylinder [615]: 611

Do you want the heads parked automatically after
 3 seconds of inactivity ? [Y/N] : N

Last cylinder used by first partition
 (range 2 to [default]) [614]: 3

Number of AmigaDOS sector buffers [30]: 30

Would you like to mark any blocks on the disk as bad ? [Y/N] : N

Continuing will destroy any information on the
entire physical device, and the system will have to be rebooted.
Do you wish to proceed ? [Y/N] : y
PREP complete. Reboot the system before using this drive.
Then Format dh0:
```

Figure I: Installing a cylinder DH0: partition from start to finish

make partition one – DH0: – as small as possible.

The 1.3 manual suggests that you might like to make DH0: large enough to hold the contents of a Workbench disc, primarily so that you can re-boot from the recoverable ram drive RAD: if you have enough memory for all the required files. This process also requires many of the Workbench files to be present on DH0:.

I chose not to make use of this feature, so gave DH0: only two cylinders – 68k, the minimum permitted – and subsequently installed Workbench on the FFS drive.

The final question requires a little explanation. Often when a hard disc is produced parts are not quite up to standard. You need to tell the program where they are so that those parts of the disc can be marked unavailable. There is usually a list stuck to the disc.

You have a final opportunity to abort the procedure, or continue to Prep the disc. Prep creates the device RES0: which consists of tracks 0 and 1, used by AmigaDos for its own purposes and not available to you.

If you make changes to the settings in Mountlist for the device RES0: you must re-run Prep before you can mount or format the hard disc successfully.

Now re-boot the computer again, load Mountlist into a text editor and check that the entries for RES0: are correct. Check that the Unit entry is 1 for a first hard drive of the ST-506 type and that Surfaces – the number of heads – and BlocksPerTrack match those for your drive. Don't make any other changes but check that LowCyl and HighCyl are 0 and 1 respectively.

Look through the Mountlist file; you should find an example entry for a device called FAST: You can change its name to anything you want. I chose FS1:.

The majority of the entries should be the same as those for RES0:, but you must change the LowCyl and

▶

Check your software installation

Two types of drive are commonly used with the Amiga. SCSI and ST506 types may both be used with the Amiga 2090 and 2090A controllers, but only the ST506 drives are normally supplied by Commodore. This is not true of some third party supplies, so check which you have before setting up. It is assumed in this article that you will be installing an ST506 drive. The software installation is essentially the same for both types, with the following differences:

ST506	SCSI	Description
RES0:	RES2:	Device name for cylinders 0 and 1, used by AmigaDos
Unit=1	Unit=3	Used in MountList RES0: and FFS partition definitions.
DH0:	DH2:	Drive name for first partition of first hard drive.

Further partitions may be called whatever name you choose to give them in Mountlist.

◄

HighCyl values to suit the size of your partitions. In my case, as DH0: is using cylinders 2 and 3, the entry for LowCyl needed changing to 4 and HighCyl to 611, as I wanted to use the rest of the drive as one partition.

If you want more than one partition in addition to DH0:, set HighCyl to the value you want for the top of the first FFS partition, then copy the whole entry for FAST: and change LowCyl for the new entry to start at the next higher cylinder and the top with the highest cylinder you want and so on until you have created the number of partitions you want and used up all the cylinder. Don't forget to give the second entry a different name from the first, by changing FAST: to something else, say FS2:

Mountlist can then be saved and it is time to format the different partitions. This can only be done from the CLI. DH0: will have been mounted automatically when you re-booted the computer, so you can just type:

```
FORMAT DRIVE DH0: NAME MyName
```

Once DH0: is formatted it is time to format the other partitions. Before you can do this you must mount each drive. Enter:

```
MOUNT FS1:
```

or whatever description you gave the entry in Mountlist, and follow this with:

```
FORMAT DRIVE FS1: NAME MyName2 FFS
```

Don't forget to add the FFS to the end of the command this time, so that the partition will be formatted as a FastFileSystem drive. Repeat the procedure of mounting and formatting for any further partitions you have created.

You are almost finished now, and you should find that if you type:

```
CD FS1:
```

the new drive responds to other commands such as Info or Dir. If everything is OK make changes to Startup-Sequence so the new drives will automatically be mounted every time you boot the computer.

Now copy the Workbench files from floppy to your hard disc as some of them will be required when you boot up.

In the S directory of your floppy you will find a file called Startup-Sequence.hd. This is the one you need, and its name must be changed to Startup-Sequence. Delete the original Startup-Sequence file on the floppy as you won't need it again and rename Startup-Sequence.hd to Startup-Sequence.

Load the new Startup-Sequence file into ED and find the BindDrivers command. Insert lines after BindDrivers, the new Mount commands for each partition – except the first – DH0:. Further down the file you will see a line assigning SYS to DH0:. You should change DH0: to the name you have given the drive partition which now contains Workbench.

Save the file and you will then be able to reset the computer and boot from the floppy drive. You can make improvements by editing the Startup-Sequence files on the floppy and hard discs.

Startup-Sequence on the floppy uses an Assign >NIL: DH0: EXISTS line. This checks to see whether the drive is present. We know it is, so comment out the line with a semi-colon and also the If Not Warn line and all the lines from and including Else to the end of the file.

Now load the Startup-Sequence file on the hard disc and comment out the BindDrivers line, as the command has already been issued from the floppy disc. You might as well change the SYS:System/SetMap usa1 line to read SYS:System/SetMap gb, so that the keys do what you expect.

As a little extra bonus, I also include the following line immediately before the EndCLI line at the end of the file:

```
NewShell "NEWCON:440/150/200/50/Shell"
```

This provides a small CLI window in the lower right corner of the screen, on top of the Workbench screen, so that I can either use the mouse or issue CLI commands directly from the small window.

Guide to setting up

1. Back up any existing data on the hard disc to floppy, for possible later restoration.
2. Make working copies of Workbench 1.3 and HDInstall discs.
3. Run the Install program, found on the HDInstall disc.
   - a). Select option 0 from the list of hard drives.
   - b). Answer questions about number of heads, cylinders, and so on, according to the drive you are using.
   - c). Specify last cylinder number of first partition.
   - d). Select default for AmigaDos buffers.
   - e). Mark bad blocks, if any.
   - f). Complete Install procedure.
4. Re-boot computer.
5. Check Mountlist file for correct entries and adjust to suit your drive if necessary. Add new entries for partitions.
6. Format DH0:
7. Mount and format each further drive partition, according to the names you gave them.
8. Copy required files on to hard drive.
9. Alter Startup-Sequence as necessary.

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Out of control

Steve Rackley looks at Project Master and comes up with a cheaper solution

DURING idle moments I've often wondered about the usefulness of management tools. Do they serve a purpose beyond keeping managers busy and giving them something to justify expensive hardware on their desks?

Project Master splits a job into stages. You give the system your estimates as to how long each step will take. You then add estimates for the cost of each step and the resources needed. Some steps may be concurrent, so that if you have sufficient resources the steps can be carried out simultaneously.

The system calculates total time taken, total costs and resources. It can also calculate critical paths, the tasks which *must* be finished before the project as a whole can proceed any further.

Then by entering real data as it becomes available, for example how long a step took or how much a certain resource actually cost – often nothing like the estimate – the system updates its totals and revises the overall timescale to take account of late or early (ha ha!) completion of the tasks. It's this copious re-entry of data that makes a project management system's data entry facilities so critical.

Project Master's features include the ability to produce time, cost and resource charts giving a graphical representation of the duration and cost of each task, with statistics such as critical and maximum paths, progress and cumulative costs including percentages of estimates.

INITIAL data entry is laborious; keeping everything up to date is almost as bad. Project Master works happily with incomplete data, giving you as much information as it can from the input provided, but that is no excuse for the poor design of the data entry stage.

Charts can be printed and plain reports produced. Resource charts are an easy way to highlight idle resources or show up overlap caused by allocating the same workers to two concurrent tasks. Project Master doesn't warn of this sort of thing automatically – it allowed me to allocate one person to three concurrent tasks, spending all of his working week on each of them.

Compared to similar offerings on the PC, Project Master doesn't seem to offer anything special, but does lack some features found on more expensive products, such as the ability to specify the extent of a resource's availability.

I'm not a project manager, but I know a man who is. In his opinion perhaps the single most important feature of his expensive PC software is its ability to set up a "resource pool", which is independent from any project and includes individual calendars.

When holidays are booked, they are entered and reflected in all future calculations. The lack of such features relegates Project Master to the amateur scale, which in turn casts doubt upon its entire worth.

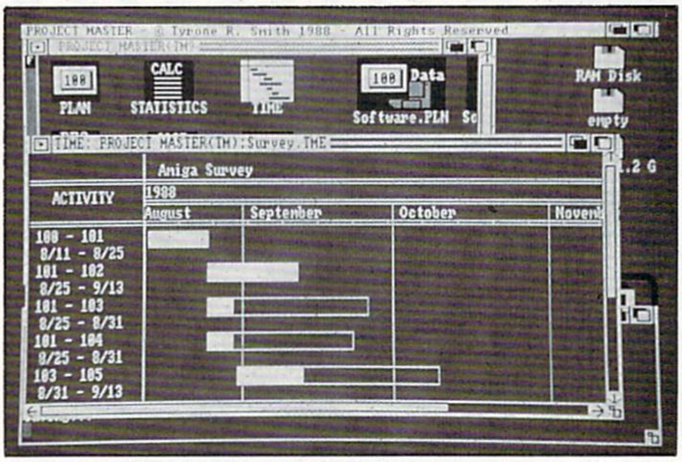
I work in a large office where several software projects are always under way at once. Although most of the managers have tried tools such as ▶

◄ this, they generally give up on them as being more trouble than they're worth. An exception is one colleague who is using a package costing around £1,000 to control several large interrelated projects involving dozens of people and other factors over a two-year period. I'd hate to try that with Project Master.

If this kind of software is to earn its keep, it has to be easy to use. I'm afraid Project Master just isn't, although it seems so at first sight. It's very well presented, it multi-tasks beautifully, and it is fairly well documented. But this type of software stands or falls on its ease of input. Project Master falls. Dates must be input with separating hyphens.

Rates of pay can only be given as a whole number of pounds or dollars per hour, which could give some pretty large discrepancies on a major project. I found that going back to look at a previous task in the middle of entering a new one lost half the data in the new task.

I've got a better project management aid. It's called pencil and paper.



The lack of powerful features relegates Project Master to the amateur scale, which in turn casts doubt upon its entire worth

REPORT CARD

Project Master
Brown Wagh 0101 408 395 3838
$195

EASE OF USE
Input is of great importance, and it just isn't up to a professional standard.

SPEED
Really needs a hard disc. Hardly the software's fault, but still relevant.

VALUE
As these things go, it's reasonably priced, but its quality reflects this.

OVERALL 39%

While any attempt to produce Amiga software aimed at corporates is laudable, this is a disappointment.



Now children can really have fun while learning. Fun School 2, designed by a team of educationalists, is available for three age groups: Under-6s, 6-8 year olds and Over-8s. Each pack comes with eight colourful and exciting programs, a colourful button badge and detailed instructions giving educational help.
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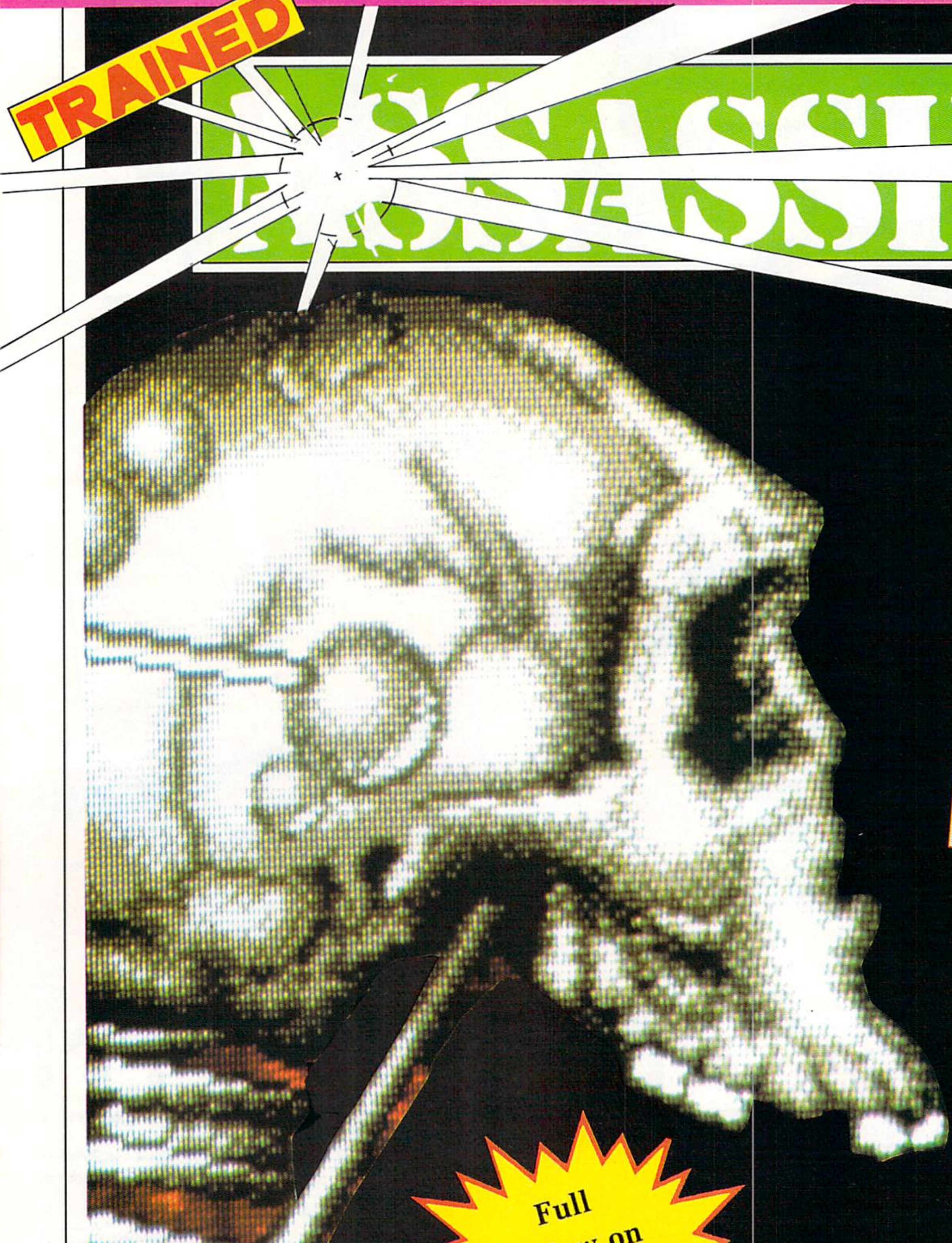
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What you'll find on our



DIGITAL Magic Software has pulled off a real coup. Its first two games releases have won *Amiga Computing* Excellence awards. And when we first saw Trained Assassin, we knew we wanted **this** game for our debut cover disc.

The folks at Digital Magic Software chose to give you level four, the Chasm of Skulls. It's got flying eyeballs, leaping protozoa and tracker tumours – a level not for the weak of stomach. Even our most hardened games reviewer almost lost his lunch.

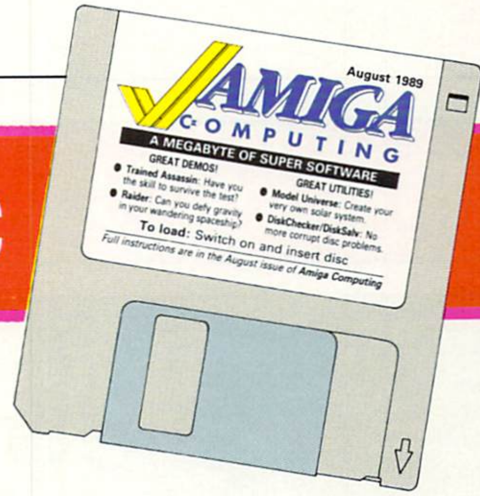
> To load *Trained Assassin* switch on your Amiga, pop the cover disc into DF0:, wait a few seconds for the Workbench then double click on the CD001 icon. When the disc window has opened, double click on the Trained Assassin icon.

Shoot the eyeballs for points before they jump out of their sockets. Pick up the extra weapons, but watch out for the relentless scrolling – you might get squashed.

As a budding assassin you need to know how to make the most of the weapons. The attract mode screen describes some of them. It also advises you to press Help for extra descriptions. Don't bother, the second page isn't included in this version.

All the weapons autofire. There is no need to set the

first cover disc



switch on your joystick, just hold down the fire button. You can't turn and shoot. This is so you can flee and fire.

Remember to let go of the trigger if you want to flip round or shoot in another direction. Once you have some of the more powerful weapons, the way you are facing becomes very important.

If you need to take a trip to the bathroom or rest an aching index finger, hit the Del key to pause. If you are doing so badly you are ashamed of the score, press Esc to quit.

Because of the way the program has been compressed to save space on the disc, you may have problems loading it on an unexpanded 512k machine if you have a second drive plugged in or if you have run another program first. The remedy is simple: Switch off, unplug any memory hungry peripherals, switch on and try again.

THE WHOLE GAME

THE trouble with playing one level of Trained Assassin is that half-an-hour later you want to play another. Don't panic! We've thought of that.

So sure are we that you'll want more of this mindless mayhem which scored 15/15 for gameplay that we've got our mail order boys and girls to stock up on the full version.

And as a special treat for *Amiga Computing* readers, we're knocking a fiver off the the retail price, which means you can pick up this coin-op quality game for under £20. Check out Page 52 for full details.

DiskSalv is run from a CLI or Shell and in the simplest case is used very much like DiskCopy.

DiskSalv

DISKSALV is a program designed by Dave Haynie of Commodore US to salvage any files and directories from a damaged AmigaDos file system device – hard or floppy – to a good one.

This is version 1.40 – the very latest update which works with the AmigaDos Fast File System (FFS). It fixes all the bugs found in previous versions.

To recover files from a bad disc in DF0: and restore them to a good disk in DF1: you would type:

```
disksalv FROM df0: TO df1:
```

The FROM and TO keywords are optional if the input and output devices are kept in that order. In use, DiskSalv will immediately print to the screen the detail shown in Figure I.

At this point, pressing Return will start the recovery process, pressing N followed by Return will abort.

```
DiskSalv V1.40 Copyright (c) 1989 by Dave Haynie

Salvage FROM Device DF0: TO Path DF1:

DEVICE     =    trackdisk.device    (DF0:)
UNIT       =          0   FLAGS      =       0
HEADS      =          2   SECTORS    =      11
LOCYL      =          0   HICYL      =      79
LOBLOCK    =          0   HIBLOCK    =    1759
RESERVED   =          2   MEMTYPE    =       3
ROOT BLOCK =        880   DISK SIZE  =    1760

Scan Range: START 2, STOP 1759, Expecting Standard FileSystem

Should I continue [Y]
```

Figure I: The first step to a healthy disc

There are quite a few options in DiskSalv that will modify in various ways the recovery action, including ASK, which allows the disc salvage to proceed interactively instead of automatically. You will be prompted at each file or directory.

Entering Y will recover that file or move into that directory. A reply of N will skip that item. Replying ? will list all the valid options.

Typing A will recover everything left at the current directory level, U will skip everything left at the current directory level and Q will quit the program completely.

Full details of the program, the options and the error messages are included on the disc in the file DiskSalv.doc. Double-click on the icon and read the documentation before using the program for the first time.

● IF you are not a subscriber and your disc does not work, please send it to: *Direct Disc Supplies Ltd, Dept Amiga Computing, Unit 19, Teddington Business Park, Station Road, Teddington, TW11 9BQ.* You will be sent a new disc.

● IF you subscribe to *Amiga Computing* and your disc has been damaged in the post, please send it to: *Database Direct, Amiga Cover Disc, FREEPOST, Ellesmere Port, South Wirral L65 3EB.* You will be sent a new disc.

● IF you damage your disc – for instance if the dog has chewed it or your mum has washed it – you can get a new one by sending £1.50 to: *Direct Disc Supplies Ltd* making your cheque or postal order payable to Direct Disc Supplies Ltd.

Now turn to next page

What you'll find on our first cover disc

RAIDER

ONE of the most addictive games ever released on 8 bit machines was Thrust. Fancy graphics were sacrificed to make room for the best gameplay this side of Tetris. Many an addict found himself playing through the night, battling bravely against the seemingly impossible forces of gravity and strategically placed gun emplacements.

Imagine a 16 bit game with that sort of playability but with great graphics as well. Raider is that game.

To load: *Raider* boot up the cover disc, open CD001 and double-click on the Raider icon.

You can re-define the playing keys to use either joystick or mouse. Don't bother, the keyboard is the only sensible way to play. The default keys are:

Thrust	Right shift
Fire	Return
Shield/tractor	Spacebar
Rotate left	Z
Rotate right	X
Pause	P



If those don't suit, you can re-define the keys to your favourites. Don't worry about Vis, the visibility torch, you won't need it until you buy the whole game.

Press P at the re-define screen to enter a password and go straight to the more difficult second level. We'll leave you to discover the identity of that four letter word for yourselves.

As you use thrust, your fuel decreases. The amount you have on board is shown at bottom left, the upper of the two counters. Extra fuel can be gained by picking up the blue capsules with your tractor beam. This is directional – you do not have to be exactly over a capsule to grab it. A warning siren will sound when you are low on fuel.

On the right-hand side of the status panel, the middle light (green) remains lit for as long as fuel capsules are available on the current planet.

The bottom, orange light remains lit while the end-of-level bonus is still available.

If you successfully complete the first level the password to the second will be given to you.

The mission consists of collecting green cogs which are hidden from you at the start of each level by a cunning cloaking device.

Let gravity do all the work – only use fuel when you have to. You should rarely have to thrust downwards.

Don't shoot the fuel capsules, but blast away at everything else – ammo is free. Be careful not to get too close to something you are shooting. You will die if you are caught in the explosion.

To shoot a difficult gun emplacement, drift into its line with your shield on and blast away.

Once you have blasted all the bases, the top light of the three – blue – will be lit letting you know that the cog's cloaking device has been deactivated.

You must hunt down the cog, collect it with your tractor beam and thrust away from the planet to finish the level. Pressing Esc in pause

DiskChecker

DO you often copy software on to floppies to take home from work or for archival purposes? Every once in a while, do you find that something has been written incorrectly to disc? Are you sick and tired of this? You are? Then you need DiskChecker.

This program, based on DiskSalv and written by C. Harald Koch of Toronto earlier this year, will read every sector on a hard or floppy disc, reporting any read errors found. To check a disc type:

DISKCHECKER
This program runs from a CLI or Shell. To check a disc type: DiskChecker [option] <device-name> where *device-name* is the name of a disc device – DF0:, FF0:, DH0:, RAD:, and so on.

DiskChecker will print statistics about the device and then read through each sector on the disc. It will report any errors encountered by error number.

In addition, if the error is a valid Trackdisk.Device error, the program will print a descriptive error message.

There are two options: -q (a hyphen followed by lower case Q) performs the check quietly and only reports errors encountered.

The second option, -v (a hyphen followed by lowercase V) performs the check verbosely displaying data about every sector checked. So to check a disc quietly in the internal drive, type:

```
diskchecker -q df0:
```

The program will abort if



mode aborts the mission. Now stop reading this and go and have some fun.

Because of the special compression technique used to squeeze more of the game on to the disc, A500 owners with no extra memory may experience difficulties running it if a second disc drive is fitted or if another program has been run before Raider. If the program hangs with a blank screen remove the disc, switch off, wait 20 seconds and try again.

THE WHOLE GAME

After completing this demonstration version of Raider, you'll want to get your hands on the real thing – the other 38 levels which scored 15/15 for graphics and caused our reviewer to comment: "The graphics used to define the various planets and moons are wonderfully drawn and smoothly scrolled in all directions. Every new landscape is a joy to look at and explore".

Never fear, mail order is here. Turn to page 52 to read full details of how to get hold of Raider for just £14.95.

you type Ctrl-C or Ctrl-D.

DiskChecker tries to make certain sanity checks about devices. It will not let you check CON:, for example.

However, these checks are far from perfect. You will crash your machine if you try to check SER:, PAR: or PRT:. Make sure the device statistics printed look reasonable before proceeding.

DiskChecker does what it says, and will only check discs, not Amiga devices.

AMIGA COVER DISC

Win up to £1,000 !

WE are looking for original contributions for the *Amiga Computing* cover disc. If you think something you have written or drawn is good enough to share with everybody else who reads the magazine, send it along and we will have a look. If we like what we see, it could earn you up to £1,000.

Please let us know if your submission needs any files from the Workbench disc. Programs which use the Amiga's built-in speech can be particularly greedy in this respect.

If your program is clickable from Workbench, feel free to design an original icon. In fact, we'll pay small amounts for good icons, even if there is no program attached. But don't make them too big. And please use the standard Workbench colours.

Bear in mind that a program which does not run on a 512k machine would have to be exceptionally good to make it on to the disc.

Please enclose this coupon, or a photocopy of it, with your submission. Include a file on the disc with full documentation, your name, address, phone number and a few details about you and your kit. Don't forget to duplicate on the disc label the program name, your name, address and phone number. If you want your disc back, enclose the correct amount in stamps.

Name.. Age.......years

Address...

....

....

Daytime phone .... after....am

Evening phone.. after....pm

Submission name...

Submission size..bytes in total

NOTE: We will accept submissions up to 500k in total length, including documentation. But the shorter your submission, the better chance it stands of getting on to the disc. If it is a compiled program, include all the source code, but do not count this in the size of the submission.

Write a brief description of your submission below. If it consists of more than one file, describe what each file is for. Attach an extra sheet of paper to this form if necessary:

....

....

....

....

Sign this declaration:

The stuff on this disc is mine. I didn't nick it off someone else. It hasn't been published before and I haven't submitted it elsewhere because I want *Amiga Computing* to publish it.

Signed.. Date..............................

Post your submission to: Jeff Walker, Amiga Computing, North House, 78-84 Ongar Road, Brentwood, CM15 9BG.

Disc bargains!

Send for the full version of the great games on this month's* Amiga Computing *cover disc – and SAVE £10!

Trained Assassin

SAVE £5



This blockbuster combines the best features of some of the most popular games ever to have appeared on the Amiga.

It features five action-packed levels with different varieties of scrolling and gameplay, with the fifth level guaranteed to raise your joystick's temperature by a few degrees (if not your own).

"Trained Assassin is of a standard that could probably survive unaltered in a real arcade – few games could manage that." – **Stewart Russell, *Amiga Computing.***

RRP £24.95
Our Price
£19.95

Raider

SAVE £5



Skill and determination are the qualities you'll need in vast amounts if you're going to fully master this game.

Your mission consists of collecting pods by hovering above them and switching on your tractor beam, but all the time you have to take into account the effects of intertia and gravity, controlling your ship as smoothly as possible – to avoid colliding with the planet below.

"The graphics are wonderfully drawn and smoothly scrolled in all directions. Every landscape is a joy to look at and explore... delicate, addictive gameplay." **– John Kennedy, *Amiga Computing.***

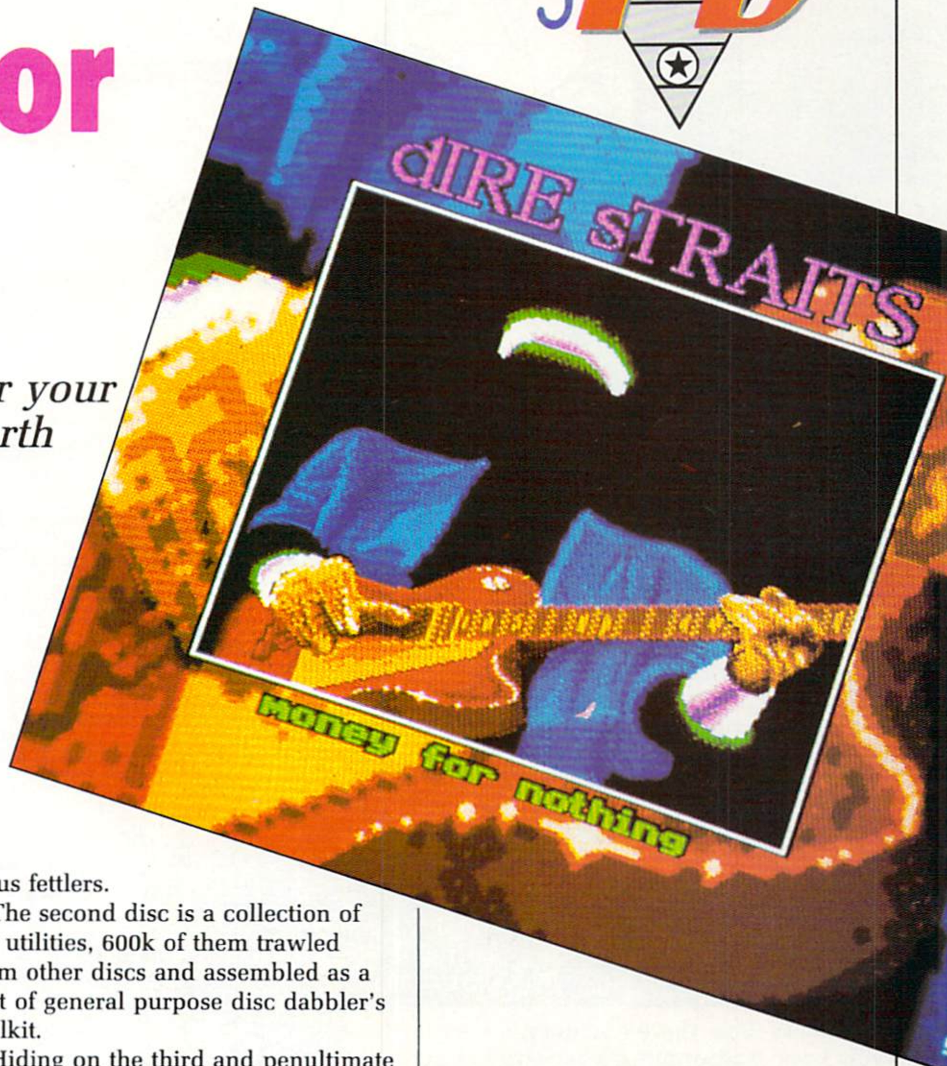
RRP £19.95
Our Price
£14.95

TO ORDER PLEASE USE THE FORM ON PAGE 95

Sweet PD

Money for nothing

Pssst, want a free plug for your PD club? Fat Angus's fourth floor office is the best place to find one



MY guru is busy meditating but while he was away doing grinding-halts to my machine I received a package from a cheeky chap who reckons he can find his way into *Amiga Computing* on the merits of his work. A cunning ploy to slip past the armed guard in the lobby, abseil up the stairwell and arrive at Angus's linen cupboard in the fourth floor washroom.

David French, or David French Software as he prefers to be known, is one of the growing band of speedboat drivers who realise that at the age of 13 there is more to life than modelling life jackets.

Swapping throttle and surf for Amiga and mouse, he's tied up his powerboat and left the swell of the ocean for the smell of the keyboard. Not content with sending me discs which make good drinks coasters, he sent me a swatch of newsletters wrought from his own fair nine pins.

Taking the discs in reverse order (scsid eht) there's a collection of virus killers, including the very useful VirusX and the pretty but not too delicate Blizzard. With the Prat Quotient on the increase, it's not enough to set the write-protect tab on the disc. Everyone *must* have some sort of virus protection.

The disc autoboots to a choice screen. It's here that I may fall out with young French. He's included that damn awful progette that makes the screen undulate as if you're looking through rippling water. It's OK for a minute or so but there's no room for it on a serious collection of virus fettlers.

The second disc is a collection of PD utilities, 600k of them trawled from other discs and assembled as a sort of general purpose disc dabbler's toolkit.

Hiding on the third and penultimate coaster is a wee beastie by the name of Diskmaker. Frenchie describes this as "a minor utility by myself that runs from Dos and prepares discs for booting". At present this only works for rich people, but a version for single drives is imminent.

The final disc will have to wait until another day for its international debut because I've used one hot cup too many on it and it's gone to that great random access in the sky. The newsletters are informative hints and tips written in a zingy and easy to read style. Their style and content leads me to believe that we'll be hearing more from David French.

MARTIN at 17 Bit must get Angus's award for turning out the largest amount of quality PD the quickest. I can't remember whether I've burbled about 17 Bit Disc 323 before, but even if I have, it's got to be worth another paragraph.

Remember when digitised music first appeared on the Amiga and we all went Pheeeeewwwwww corrrrrrr bl****** h**** and all that? Nowadays it all sounds similar, uses the same samples and has that infuriating electronic drumkit that Kraftwerk threw out in the 'seventies.

17 Bit 323 uses all those predictable digitised delights that are apt to make us yawn but young Sixsmith, the Programmer/Compiler, has welded them together in a rather pleasant six minute rendition of something by Vangelis. The accompanying slideshow is simple but effective. The overall effect is slightly stunning.

Arghhhh, I've done it again. Slightly stunning. As you read this, think of the poor old sub editor, whose job it is to remove nonsensical drivel such as "slightly stunning" from this article. I'm sure that as he ▶

Lancelot



WIN
this solid silver Grail, worth £5,000, in the exciting Quest for the Holy Grail competition. Full details in every box.

Travel back to the Age of Chivalry when knights were bold, galloping across the countryside and rescuing damsels in distress.

Level 9 recreate the time of wizards and the Knights of the Round Table in their greatest adventure yet. Lancelot consists of three interlinked adventures, spanning the complete saga from the foundation of the Order to its finest hour – the quest for the Holy Grail.

Guide Lancelot through his many exploits at Camelot, battle with wayward knights, and win the love of Guinever and Elaine.

The challenge which has fascinated treasure hunters through the centuries is now yours – and you'll need all your strength, wit and valour to achieve your goal.

Inside every box there's a detailed guide to playing Level 9 adventures, a background story to the classic legend, a parchment map of Arthurian England – and full details of how to take part in the Quest for the Holy Grail competition.






Screen shots from Atari ST version

MANDARIN SOFTWARE

Level 9

Please send me the following Lancelot (tick the format you require):

£14.95	Tape	Disc
Atari XL/XE	7063 *	7065 *
Amstrad CPC	6171 *	
Apple II		1052 *
BBC Master		2192
Commodore 64	9003 *	9004
MSX 64k	9093 *	
Spectrum	9091 *	

*** Text only**

£19.95	Disc
Atari ST	9155
Commodore Amiga	9522
Amstrad CPC/PCW/ Spectrum Plus 3	6172
IBM PC and Compatibles	5724
Macintosh	1053

Tape versions come with three cassettes in every package

❑ I enclose a cheque for £............(including VAT and p&p) made payable to Mandarin Software

❑ Please debit my Access/Visa card no:

Expiry date:

Signature: ....

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Address: ....

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SEND TO:
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AMC8

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MANDARIN SOFTWARE

arrived at it he drooled with anticipation and pulled out the blue pencil. Alas for him, I've gone on to tell you what he should do.

If you're reading this and there isn't a reference to "slightly stunning" two paragraphs back, then the sub editor has deleted it without reading the rest of this. Have him taken out and shot.

The Starship Enterprise leaving the spacedock demo on 17 Bit 329 has lost some of its sparkle, which brings me to a valid point. If I'd wanted a machine that gave me pretty pictures and sound, I'd have bought a video recorder. For a couple of hundred pounds it will run animation and sound for four hours. I mean, it's nice to see the Amiga stretched to its capabilities, but if a film company were to put four shots of the Enterprise leaving a dock in space on a video, we'd consign it to the bin.

Mind you, I got a buzz from watching Arthur Fairclough (three doors up the hill on the left) drop his jaw in amazement and head off to the local paper to put in the following classified ad: *FOR SALE. Atari STFM. Only 2 weeks old. Still in box. Unwanted gift.*

That's all very well, and at least it got Arthur a decent computer, but I still feel that demos of this sort have to be looked on as a consumable that may only be watched a few times and then either consigned to the disc box or reformatted.

FOLLOWING John Kennedy's advice in the Basic series last month, I decided to look to the chocolate digestive as an alternative data storage medium. But although it's a good standby, the constraints of a single sided 178k format is too restricting for my purposes. So I delved deeper.

I've found that chocolate Hob Nobs will format to about 440k, but again they are only single sided. My finest result was to use a Burton's Wagon Wheel as a 20 meg removable hard disc, taking advantage of the alternate layers of chocolate, marshmallow and biscuit to distinguish the different plattens. Only problem there is that it needs to be kept cool or your



Fred records a gold fish disc

programs all run together.

Less of the frivolity and back to the serious stuff.

Public domain software is arriving so thick and fast that it would need a magazine all to itself to cover everything. It is easy to keep on looking for the new stuff and forget the old, so every month I'm going to blow off the cobwebs and tackle a couple of golden oldies.

And where better to start than with a goldfish. There are two ways to get a goldfish – win one at a fairground or send Fred Fish some money. I chose the latter, and for a mere five US dollars each plus five dollars postage, Fred sent me some goldfish.

Goldfish discs are selected popular goodies from the Fish collection put on to a compilation disc. On the original discs Fred usually includes the source code but on the goldfish you get just the program and documentation.

This saves a lot of space and makes for a disc absolutely crammed with buckets of programs. The documentation has a note saying which Fish disc has the original and therefore the source code, thus making a reasonable compromise.

First into the deep fat fryer was Goldfish 1, a collection of games and things. It has the ever present Triclops and Gravity Wars plus a directory called Cutestuff which contains a few of those silly little progettes that make Workbench misbehave.

There is the one that tilts the screen, the other one that makes the windows bounce around the screen and a nasty little varmint that causes the screen to become like a slightly out of tune TV with a snowy effect.

Goldfish 2 is a tidge more serious with C-Shell and a few other straight faced programs. There are a couple of PD comms utilities as well, but despite its permanent frown, it's still good value.

Sitting next to a portion of chips is Goldfish 3 with its zillions of neatly ordered utility progs. SunMouse, DiskSalv, IconType, ID Handler DropShadow and about umpteen more make this one a contender for the most crowded disc of the year. You can read more about DiskSalv on the cover disc pages because we've given you the latest version on the front cover this month.

YORKSHIRE has 7,943 telephone boxes. And if Datameg of Canada succeeds, each one of those will have a universal socket connector. Undergoing trials in Ontario at present, the connector is a simple addition to any payphone allowing direct connection to a modem.

Designed by Mick Saunders, it was a product of necessity. Mick lived in a college house where the only line was a payphone. No more installations were possible, so he made modifications to it.

It worked fine and Mick was able to download from his favourite PD bulletin boards. His cousin Eileen brought a diagram home to the UK, and with some changes to voltage it has been working in a phone box in West Yorkshire since April. The price is to be set at £12.50. Ho-hum, if you had a hundred grand to spend you

could do the other 7,942 boxes and still have enough left to buy an Amiga, a good monitor and some software.

Good old Vic West, the Calor Gas Man. He came round with yet another pearl of wisdom last week. "I won't come in," he said. With all these viruses about, you can't be too careful."

"It's OK, we haven't been ill," I said.

"No, no, not you," he whispered. "It's your computer I'm worried about. I wouldn't want my BBC Micro to catch anything off your Amiga."

Still, I suppose I can't expect any more from a guy who says that the BBC implementation of Elite is the best.

Importers beware. As well as rumours of a new tax on software any program you import from abroad attracts vat at the standard rate of 15 per cent. I was leafing through some Stateside mags and saw what looked to be a bargain.

After I'd added postage both ways, the price of packaging, the loss of funds in the exchange rate and the dreaded vat, it would have cost me £16 more and taken a month longer to get. The Romans used to say *caveat emptor*. For the benefit of those who only use living languages it means: Buyer beware.

This column wouldn't be complete without a word about quilted anoraks. I was taken to task for my shoddy treatment of train spotters last month. One reader invited me to stand on the end of the platform with a bunch of his friends and savour the delights of waiting for D200, the first of the English Electric type 4s, to steam past.

"How can a Diesel steam past?" I asked.

"Don't be pedantic," I was told by Trevor. He's one of Ralph's friends.

Sheesh! Three and a half hours waiting in a Nor Easterly gale to be told by a leering BR employee that it was diverted by the Settle-Carlisle line and was now cosy and warm in Palmadie shed.

Still, Ralph's mum's homemade vegetable soup from the thermos made up for the cold and all those quilted anoraks. I never saw anyone wear one with the pixie hood up before.

WHERE IN THE WORLD?

David French Software, Gateacre, Devon Road, Salcombe, TQ8 8HQ. (Tel 0548 842965).
Fred Fish, 1346 West 10th Place, Tempe, Arizona 85281, USA. (Tel 0101 602 894 6881).
17 Bit Software, PO Box 97, Wakefield, WF1 1XX. (Tel 0924 366982).

Undercover operation

John Kennedy lifts the lid on a 68020 for the A500

MOTOROLA chips are rather remarkable in the computing world insofar as they are very compatible. The least powerful member in the family is the 68008, as used in the QL. This was hampered by an 8 bit address bus and only really took off in the control mechanisms for washing machines.

The 68000, which we all know and love, has a 24 bit address bus and 16 bit internal registers. That is, it can move data internally 16 bits at a time. It works at a clock rate of 7.16MHz – a respectable rate of knots – but there is always room for improvement.

The model up from the 68000 is the 68010, which is slightly faster because it has an internal ram cache. Here the processor remembers the last couple of bytes it was looking at and a few bytes on either side for good measure.

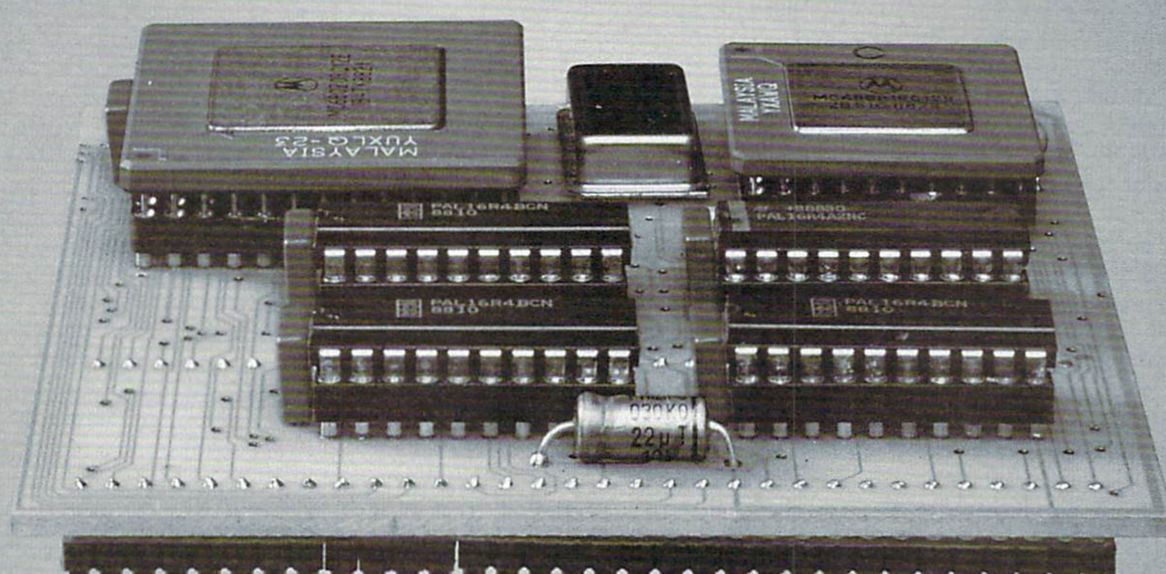
After completing execution of an instruction it checks to see whether or not it can use the data held in its ram instead of reading the slower main memory. If it can, the operation is much faster, since no external accessing has to be carried out.

The 68020 goes one step further because it is a 32 bit processor. This sounds wonderful until you realise that the processor needs two cycles of the 7.16MHz clock to read the data from the Amiga's 16 bit ram into its registers. The Animate Turbo Board counters this problem by upping the clock rate to a whoppingly fast 14MHz.

Unfortunately – isn't there always an unfortunately? – the rest of the custom chips in the Amiga will still chug along at 7MHz, limited by the speed the processor can get the operating system data from the roms. The nett result is that when you switch the computer on you won't notice the difference.

The other important chip which you can fit to the Animate Turbo Board is the 68881 maths co-processor. This shares the data and addresses buses with the processor and whenever it sees a maths instruction go by it says: "Hold on, I can do that one!" and tells the processor the answer. Because it works at the upped cycle rate of 14MHz, the chip is very fast. The co-processor is now supported in the libraries supplied with the latest (1.3) version of Workbench, which means any C or assembler programs you write can take full advantage.

Fitting the board on an A500 first involves removing the outer case and waving bye-bye to the warranty. The ▶



FLOATING POINT	68020/68881	68000
10000 functions 256000 functions	4.7 secs 48 secs	17.5 secs 150 secs

SAVAGE TEST	68020/68881	68000
2500 iterations	0.46 secs	59.6 secs

SIEVE TEST	68020/68881	68000
100 iterations	27.2 secs	45.72 secs

WHETSTONE TEST	35.82 secs	213.06 secs

Timings of the demonstration software – all very impressive, I'm sure

◄

outer case is held in place with half-a-dozen small screws with Allen key heads. These are easily removed with a pair of long-nosed pliers – or the correct official Commodore tool – and the case lifts off to reveal the large metal RF shield. More screws hold this in place. Removing the shield will allow access to the unsuspecting 68000.

Taking out a large chip is always a heart-in-the mouth process, especially as the first time it is removed the fit is very tight, causing that horrible noise which sounds like something very valuable being slowly broken.

Once the 68000 is removed the new board can be inserted into the vacant socket. This is where the first problem becomes apparent because pressing the board home can displace a small capacitor mounted nearby. In my case it didn't break off, although it was a very close thing. The second problem comes to light after the board is fitted – there is no longer room for the metal shielding, leaving no choice but to reassemble the computer without it.

Powering up revealed a black screen. This was a tense moment. A thorough investigation traced the problem to the power supply plug which had not been inserted properly into the socket.

SUPPLIED with the board is a disc of software which demonstrates the speed of the new system. These timings are reproduced in Figure I, while Figure II shows the times taken to produce a ray-traced coffee cup with Sculpt Animate 4D.

Using the board from AmigaBasic reveals some interesting results. Of four programs written for testing purposes, dealing with floating point operations, integer operations, string operations and graphics, only the floating point program showed any signs of a speed increase, and then only a touch faster. If the programs were compiled with Hisoft Basic, which uses the 1.3 maths libraries, the difference would have been greater. AmigaBasic uses its own routines which ignore the 68881 (curse you Microsoft).

Other programs actually ran *slower* by a very small amount, probably due to the increase in processing speed being absorbed by the need to access ram twice as often. Other accelerator boards solve this problem by supplying a healthy quantity of 32 bit ram – usually at least 2 meg. This is why other accelerator boards cost several times as much as the Animate Turbo Board.

A very worrying point is that some software, including LED Storm, will not run with the 68020 processor in place. Fitting the board is definitely something you want to do as little as possible. Having to remove it to run certain programs is a serious no-no. It is academic whether this was caused by illegal code on the part of the programmer or as a consequence of the internal ram cache of the 68020 – the software did not run and needed the 68000 refitting before it would.

WHEN money is no object and a heavily maths-dependant piece of programming is needed, this board will do the job nicely. When using software such as Sculpt-4D, the speed increase is considerable.

However, when using AmigaBasic the program will usually run slightly slower than if it was using the good old 68000. Programs must make special use of the maths libraries to effect any speed increase.

To an average programmer like myself the Animate Turbo Board is nice, but too expensive to be worthwhile. The money would be better spent on a hard disc.

MODE	68020/68881	68000	Speed-up
Painting	12.4 secs	25.1 secs	202.4%
Scanline painting	34.3 secs	62.2 secs	181.3%
Snapshot	903.2 secs	2416.6 secs	267.6%

Some real results using the board with Sculpt Animate 4D. The times are those taken to produce a full image of a coffee cup

REPORT CARD

Animate 68020/68881 Turbo Board
£498
Amiga Centre Scotland 031-557 4242

EASE OF USE
A very worrying point is that some software, typically a good game, will not run with the 68020 in place.

SOFTWARE
Supplied with the board is a disc of software which demonstrates the speed of the new system.

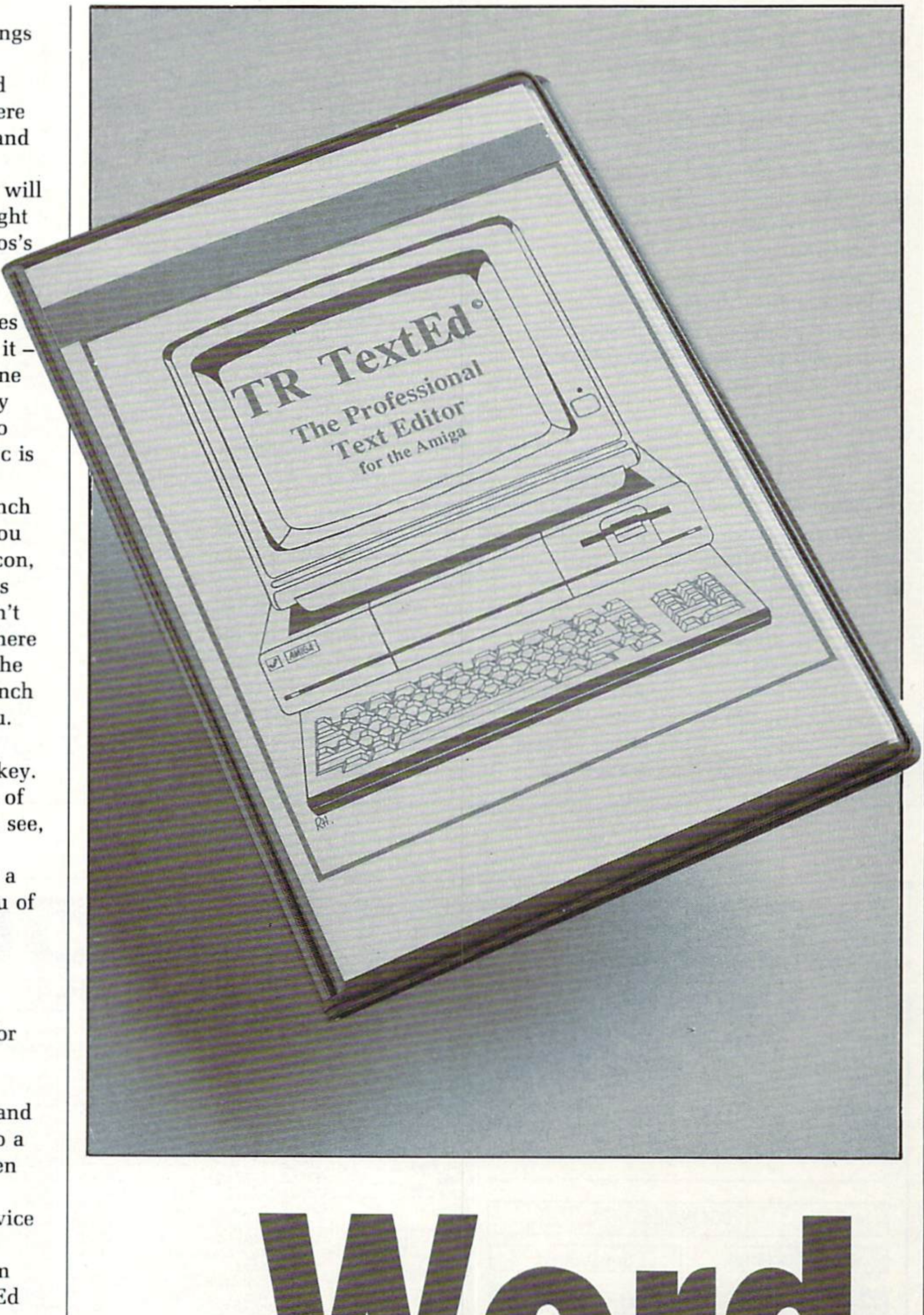
SPEED
Programs must make special use of the new maths libraries to effect any increase in speed.

VALUE
Too expensive to be worthwhile.

OVERALL 53%

The money would be better spent on a hard disc.

Word imperfect



EDITORS are one of those things we all argue over. Like languages they all have their good and bad points; like languages there are those who love their editors, and loathe all others.

TR TextEd is different. Nobody will love it. It falls untidily between light modification editors like AmigaDos's ED and the power editors like MicroEmacs.

It comes on one disc, which does not have Workbench installed on it – silly, because Commodore has gone out of its way to make that as easy and cheap as possible. There is no excuse for not having it as the disc is only half full.

Once you have booted Workbench and opened the TR TextEd disc you can load the program. Click the icon, and up it pops. Kerpow. It decides that your Workbench colours aren't up to scratch, and sets its own. There isn't a good reason for changing the colours, as it runs on the Workbench screen. It's just done to annoy you.

You are now running. The first thing I usually do is hit the Help key. TR TextEd says in the bottom left of its window: "Help is active". You see, this is a help system which now wants you to press a key or make a menu selection. No index or menu of functions.

On its own this kind of Help is practically useless. Of course TR TextEd surpasses itself when you press a key because then it asks for disc volume HELP.

And where is HELP? It's a directory on the TR TextEd disc, and you'll have to get a CLI up and do a "Assign Help: DF1:Help", and then you'll get Help. I hope you are following all this, because the novice user won't.

The final indignity in the system appears if you resize the TR TextEd window. Make it smaller than 73 columns and Help ceases to work because it doesn't pop up it's own ▶

◀

window, but uses the edit one, which is formatted to – you guessed – 73 columns per line.

So after being irritated by the Help system, on to edit a file. Select Edit File in the menu, and up pops a requester. No, not a file request like practically every other Amiga product, just an *Enter a file name* requester. Unforgivable. File requesters aren't hard to write, and there are plenty of editor requesters which you can duplicate in function. But there you go.

CATALOGUING misfeatures goes on. Mouse positioning? Only on the current screen, and no scroll bars, and you can't double click to mark start and end of block.

Status lines? Two, one at the top telling you the usual bits, like Line, Column, Insert Mode, if Search is case sensitive, the Ascii value of the character you are on and how big your line buffer is. Then at the bottom of the window two lines are wasted telling you what your right hand margin is set to when there's space up on the top line.

Cut and Paste? Apart from the confusion of options, it turns out that you can only do this on complete lines, so no snipping that function out of that bit of C code. Crude is not the word for it.

It keeps on in this vein. The fonts option which will only use non-proportional 8 point fonts unless it's its own deformed 8 point font. Eventually you'll get to the keyboard layout. All the functions which aren't on the menus are on the function keys, with combinations of Shift Alt and Ctrl. Lovely and easy to program, especially as you can't reconfigure them.

The more I played with TR TextEd the more irritated I became with it. The manual, a demonstration of why you must never let the programmer write the manual, says the author had 18 years of working with mainframe, mini and micro editors. He must have used some damnably weird and hideously cut-down editors to produce this one.

I can't recommend TR TextEd. The version I had was V3.0, and quite honestly, if it's taken this long to get to this, it's going to be a long while before it becomes a worthwhile editor. You get better (ED and MicroEmacs) on your Workbench discs, and much better editors are available commercially.

REPORT CARD

TR TextEd
HB Marketing 0895 444433
£29.95

EASE OF USE.........
There are always people who buy things out of masochism. If you do, you'll like this one. Quite a lot.

SPEED....................
Lovers of the cack-handed user interface will rejoice in complicated fixed function key combinations.

VALUE ....
Does anyone want to buy my copy?

OVERALL 7%

A generous score for a program with absolutely no redeeming features.

Lombard RAC rally



Atari ST, Amiga and PC £24.95



See the driver steer and change smoothly through each of the gears



Drive down twisty lanes at night with an incredible 3D view of the road



Use all your powers of concentration to negotiate the mountain range



Build up or repair your car at any time in the well-equipped workshop

Screenshots from Atari ST version

Five . . . four . . . three . . . two . . . one . . . GO!

Your 300bhp Ford Group A Sierra Cosworth roars away from the starting line, skidding round hairpin bends, as you speed through unfamiliar, ever-changing terrain . . . in a race where every fraction of a second counts!

Lombard RAC Rally recreates all the excitement of the world-famous rally – with the help of RAC drivers who guarantee its authenticity.

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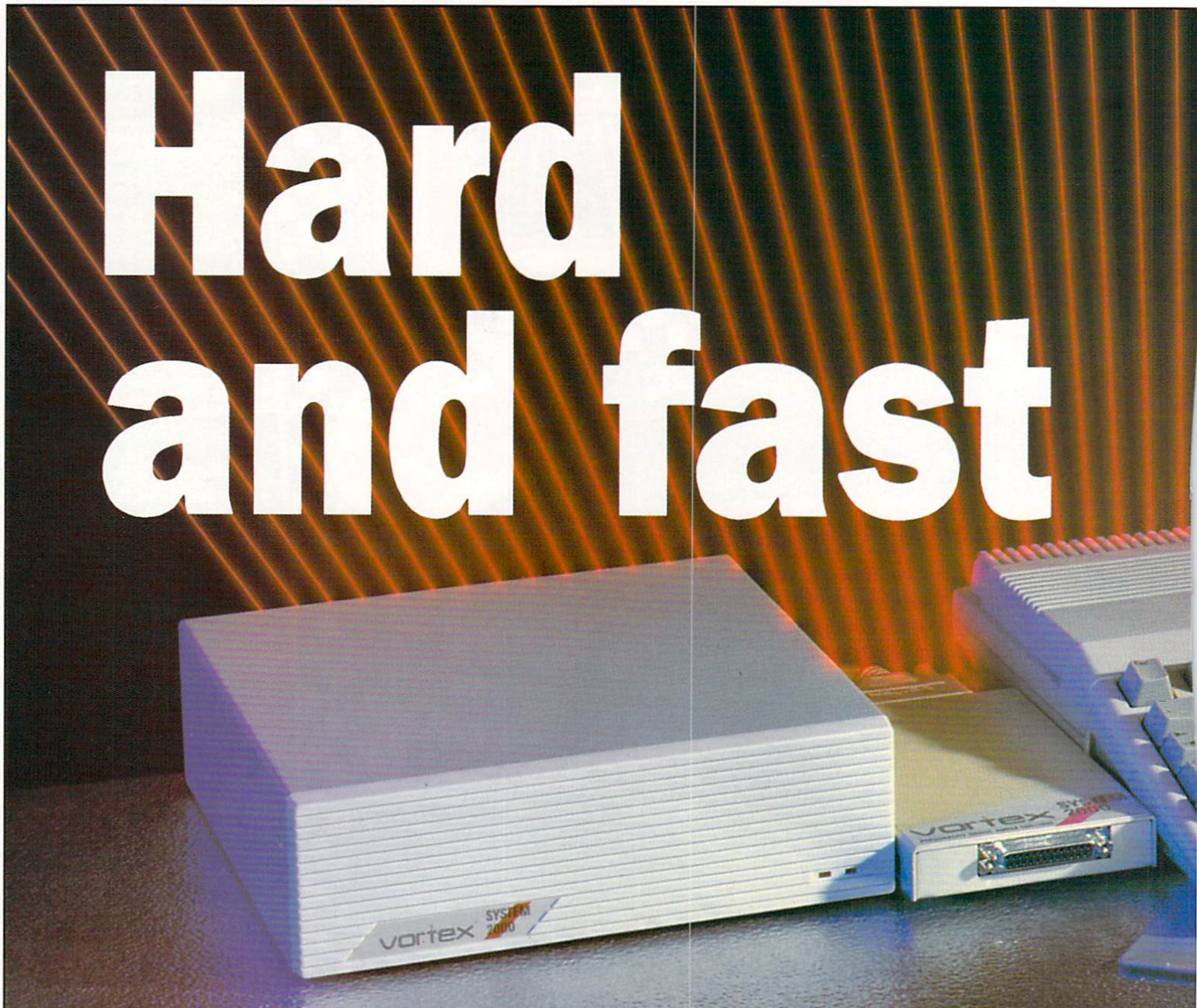
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MANDARIN SOFTWARE

in association with

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Hard and fast



WRITING for a computer magazine is not all it's cracked up to be, especially when the editor plonks a lump of hardware on your already overcrowded desk and requests 1,200 words by Friday. No sweat.

Then you remember the magazine has reviewed three similar lumps of hardware in the past six months and you are expected to find something new to say. Words flow like cold treacle. Ah, the joys of computer journalism.

Luckily for me the Vortex System 2000 has a lot to offer over and above the features of your bog standard Amiga hard drive. For a start, it's not just for the Amiga. It comes in two bits – the 40 meg drive, a stylish grey-white metal box about 9in square by 2.5in deep, and something called a Personality Module.

The Vortex Personality Module makes it possible to fit the System 2000 hard drive unit to any number of computers. Modules are currently available for the Amstrad PCW, PC and PPC ranges, the Schneider Euro PC, the PS2 Model 30 and other IBM compatibles plus, of course, one module for both the A500 and A1000.

Before you get excited, this doesn't mean you can remove your formatted Amiga System 2000 hard drive, attach it to the Personality Module on your PC and immediately start reading and writing to it. You have to reformat it first, losing all your data.

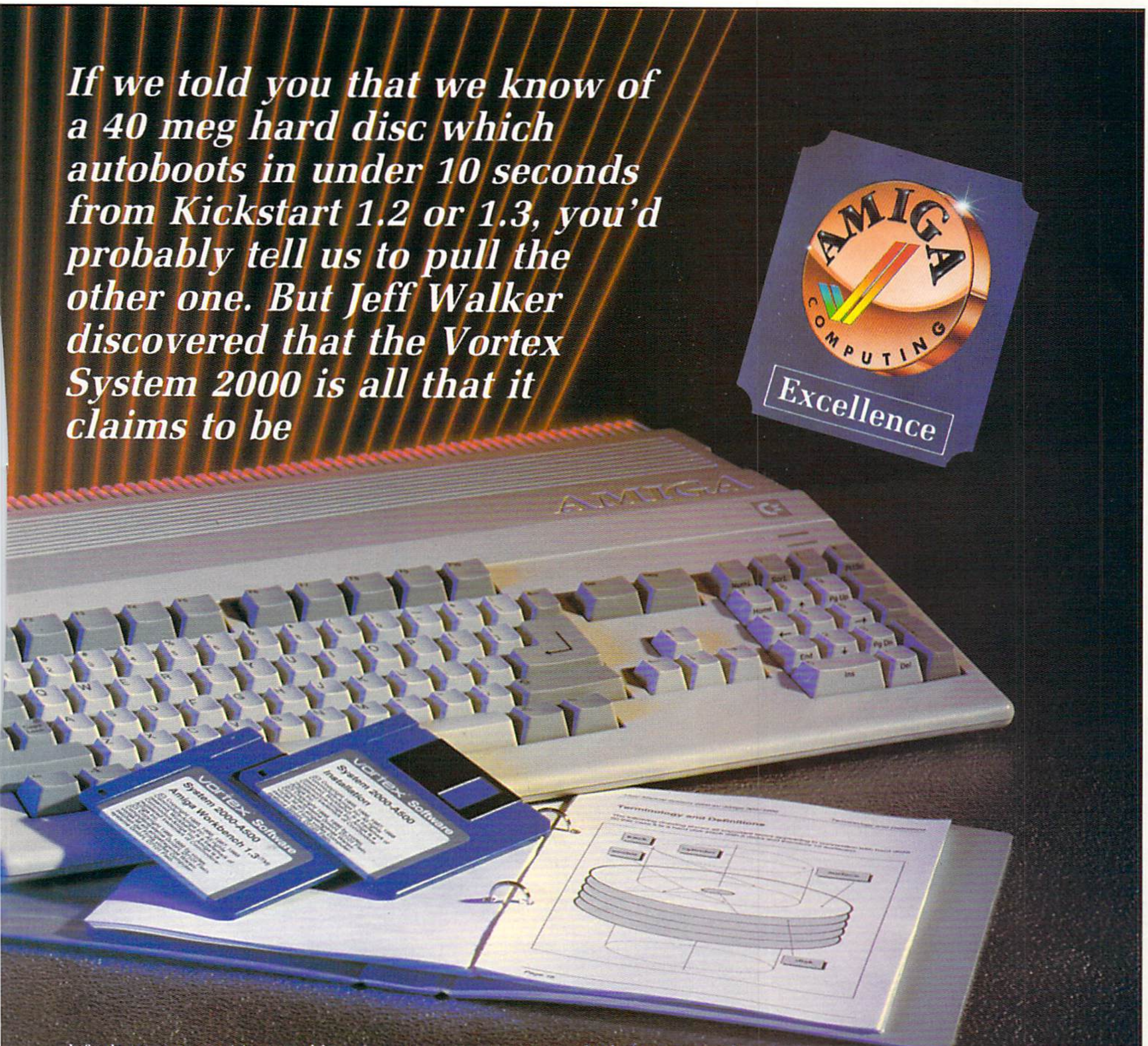
But it does mean that if you decide to change your computer system, a tried and trusted hard drive is just a £195 Personality Module away. It's probably a feature we loyal Amigans will never use, but it's nice to know it's there.

Inside the paperback-sized module is the Vortex developed Amiga BIOS eprom. It gives the System 2000 some pretty amazing autoboot facilities.

If you haven't upgraded to the Kickstart 1.3 rom yet, don't bother – this box of tricks will do what Commodore says can't be done: It will autoboot from Kickstart 1.2 and Kickstart 1.3. It will also autoboot from a Workbench 1.3 FastFileSystem partition. With a typical Startup-Sequence you can expect to be up and running in under 10 seconds.

MIRACLES have to be paid for. To autoboot from KS1.2, about 100k of memory needs to be reserved for the system. With the four

If we told you that we know of a 40 meg hard disc which autoboots in under 10 seconds from Kickstart 1.2 or 1.3, you'd probably tell us to pull the other one. But Jeff Walker discovered that the Vortex System 2000 is all that it claims to be



default 10 meg partitions grabbing about 30k each, this doesn't leave much elbow room on a vanilla A500. Depending on what you are doing in your Startup-Sequence, you'll only have about 200,000 bytes free after loading Workbench – nowhere near enough to do any serious computing.

If you have a KS1.3 machine, the System 2000 doesn't need that 100k so you're left with around 300k free, which is perhaps just enough to run one application. Multi-tasking? Unless they are very small programs, forget it.

So you're going to need more memory, which – as long as you have the cash – isn't a problem. 512k in the A500 trapdoor will do to start with. It's what I used to review the system. If you want to fit more, the Personality Module has a through connector on to which you can push a 2 meg expansion.

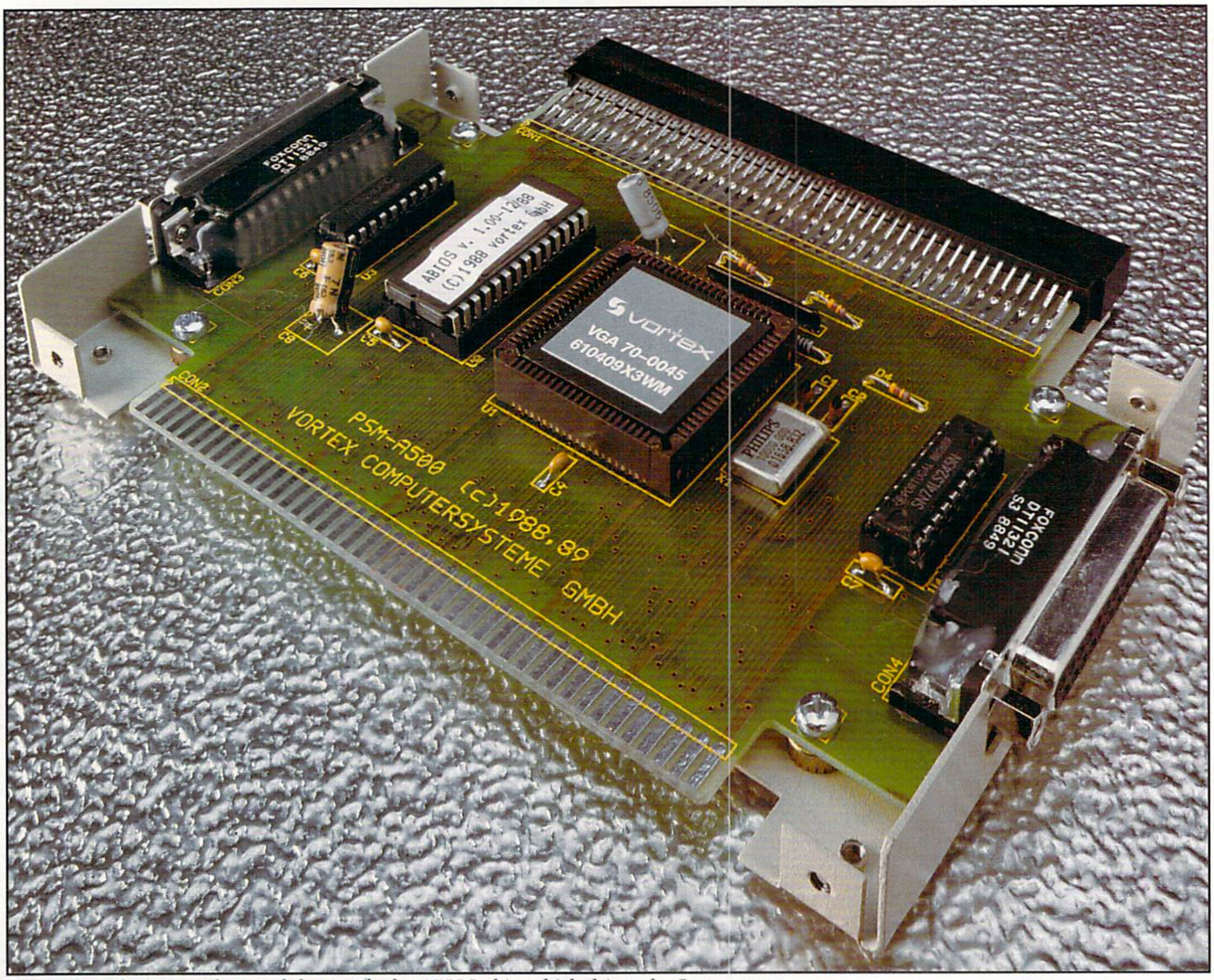
Having been brought up like a good boy to believe that it was impossible for a hard drive to autoboot from KS1.2, I was interested in finding out how Vortex had worked this miracle. The West German company is insistent that it hasn't broken any rules. "We've patched Workbench," is the official line. And indeed, below the *(c) Commodore et al* bumpf on the supplied Workbench disc is Vortex's own copyright message.

Commodore technoboffins have their own theories as to how the System 2000 works. Randell Jesup, programmer of the A590's HDToolbox, reckons that "drives which autoboot under KS1.2 take advantage of the diagnostic vector used for testing the machines in production. It works, but is not recommended in general".

I can confirm that it does work. In fact it works very well. Over a period of two months the System 2000 has done me proud. It has not fallen down and I have yet to find a program that won't run with the hard drive plugged in.

This doesn't mean every program ever written *is* going to run, although Vortex says that if any software does not work with the Personality Module attached, it's because that software is breaking the rules, not the System 2000.

Nevertheless an option is at this moment being added to cut out the ▶



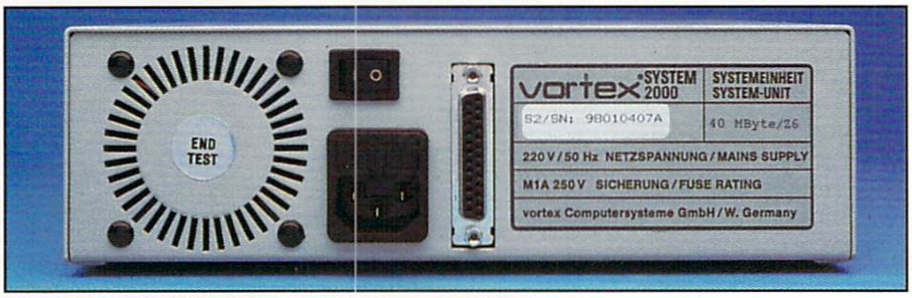
Opening up the Personality Module reveals the ABIOS chip which drives the System 2000

◄

hard drive on boot-up. Holding down the left mouse button while the system is initialising will prevent the Personality Module from activating. This has been included so that users who are short on ram will be able to run their larger programs without having to remove hardware from the expansion port. A little thought goes a long way.

The software is good stuff, although if you're not a meddler you'll have little use for anything except the public domain hard disc backup program. This is because Ideal Hardware of Surrey, Vortex's distributor in this country, supplies the System 2000 ready formatted and partitioned with the contents of the Workbench 1.3 already copied across. It really is a case of plug it in, switch on, and go.

Plugging it all in could be a



The non-standard hard drive port has been developed by Vortex to give high data transfer rates

problem if you are short of space. A sturdy cable runs between the Personality Module and the hard drive, but it is only a couple of feet in length. Much longer and the drive would suffer read/write errors. This means the drive unit has to be positioned either directly to the left of or behind and to the left of your A500.

I have one of those split level tables that has a shelf above the main table on which to plonk a monitor. The System 2000's lead is just long enough to allow it to sit up there.

I'm a meddler. I like turning knobs, pushing buttons and typing commands just to see what happens. The first thing I do when I get my hands on a hard drive is fiddle with the partitions. Usually it's a real pain, even when you know what you're doing. Vortex has made altering the System 2000's default partitioning dead simple.

You run a program on the installation disc called Part. It presents you with some information

on how the partitions are currently set up, and then asks five questions about how you want your new first partition to look. It gives intelligent defaults. The only question you need to think about is length. The figure right shows my responses to set up a single 40 meg partition – all 803 cylinders under one roof.

Following the partitioning process, which is over in seconds, you have to format them – or it in my case. This involves re-booting from the Workbench disc, opening a Shell and using the normal AmigaDos Format command specifying the FFS option to get the FastFileSystem format and QUICK so you don't have to wait an hour for playtime.

All that's left to do is copy the entire contents of the Vortex Workbench disc over to the hard drive and away you go. Literally five minutes after starting the process it's finished and done with. Painless.

```
PART for System 2000 on the Commodore Amiga
(c) 1988/89 vortex Computersysteme GmbH

The harddisk has 4 heads, 26 sectors per track and 803 cylinders
and has a capacity of 40.8 MB

Existing partitions:
 1.Partition:

                              System 2000 Ins
                                                 StartCyl = 1
                                                 Length   = 200
                                                 FastFileSystem
 2.Partition:

                              System 2000 Ins
                                                 StartCyl = 201
                                                 Length   = 200
                                                 FastFileSystem
 3.Partition:

                              System 2000 Ins
                                                 StartCyl = 401
                                                 Length   = 200
                                                 FastFileSystem
 4.Partition:

                              System 2000 Ins
                                                 StartCyl = 601
                                                 Length   = 202
                                                 FastFileSystem
Please enter new partition data

Abort entry with <End><RETURN>
Taking over the defaults with <RETURN>
The first Partition should beginn with cylinder 1,
the lower cylinders are reserved for the harddisk and
partition data  !!
One cylinder equals a capacity of 52.0 KByte

Startcylinder:  1
Length:         802
Log. Name:      DH0
Name:           Hard0
FastFileSystem? y

Startcylinder:  End
```

The partitioning program is the picture of user-friendliness. Soon it will be totally icon driven

More good news: Vortex is making the setting-up process even more user-friendly. It is being re-written to be totally icon driven. Ideal Hardware says the new software should be ready about September. You will be able to upgrade if you buy a system with the old software.

One of the things you normally have to do when setting up a hard drive is add the partition details to the Mountlist file in the Devs: directory. Not with the System 2000 you don't. It comes with a file called Vmountlist which the system reads along with Mountlist on startup. Neat.

But to make roses smell sweet you generally need a bit of quality dung. The System 2000 has a real stinker. There are two ports on the Personality Module, the back one for plugging the System 2000 into, the front one originally intended for piggy-backing another hard drive. But the ports are not SCSI, and the piggy-back option isn't available.

The front port instead serves as the correct hole to plug the lead into if you are fitting the unit to an A1,000. So if you're looking to stack up a couple of hundred megs of hard storage, you'll have to look elsewhere.

German manuals rarely translate well into English, and the one I got with the System 2000 is no exception. Because of the excellent software, however, the manual was only needed to convince me I was pressing the correct keys at the correct times. Not to worry though, it has been re-written to make more sense.

In a way this is a shame, because there are a couple of screamers in the original. I may have the only hard drive in the world which has a backside.

Talking of backsides, in the rear of the manual is an appendix containing C listings and details of how to call the Vortex driver from your own software. Techies will need this, because instead of using the Amiga's Trackdisc. Device this hard drive is driven by the System 2000's custom Vortex.Device. The associated .H and .I files are on the installation disc.

This kind of documentation is a bit heavy for me, but no doubt programmers will be glad of it and will understand every word.

In use the System 2000 has a good feel to it. It's quick and solidly built. I liked it. In fact I like it so much I bought it. Pingpong dor technik and all that.

REPORT CARD

Vortex System 2000
Ideal Hardware 01-390 1211
£573.85

EASE OF USE.........
Plug it in, switch it on and away you go. No setting up needed, but easy – and fun – to change things if you're a born meddler.

SOFTWARE...........
Extremely user friendly. A lot of thought has gone into it and it is being continually upgraded. The addition of a PD backup utility is a nice thought.

SPEED....................
Hard drives are getting quicker all the time. Being able to autoboot from a WB1.3 FastFileSystem partition makes this the one to beat for speed.

VALUE ....
Although almost £200 more than the CBM A590, the Vortex System 2000 is faster, has twice the storage capacity and autoboots from KS1.2 or 1.3.

OVERALL 92%

Except for the lack of a piggyback option, the System 2000 is hard to fault. Most users will find 40 megs more than adequate for their needs.

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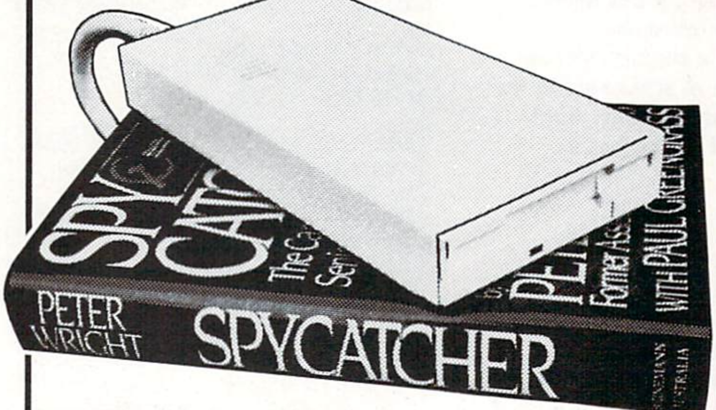
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The ideal present

WIN 6 HARD DISCS

YOUR Amiga has a hard life, regularly saving the universe and your valuable data files, indulging your artistic fantasies with Deluxe Paint – and other fantasies with Teenage Queen.

It is time your Amiga was given a present, and the ideal thing is a hard disc. The System 2000 drive from Ideal Hardware is an amazing unit. It autoboots under both 1.2 and 1.3 Kickstart, runs incredibly quickly and stores 40 meg of data. Supplied complete with the easiest to use utilities *Amiga Computing* has seen, the System 2000 has proved popular with many of Britain's leading software houses.

If you went into a shop and bought a drive, a pretty sensible thing to do – your Amiga will love you for ever after, a System 2000 would cost you £573.85. But you can win one without paying a cent – 19p for a stamp yes, a cent no.

In fact this is no measly one-prize competition, the chaps at Ideal Hardware being truly wonderful human beings are offering SIX System 2000 drives as prizes. All you have to do to stand a chance of winning one of these is answer five simple questions and send in the form to us.

1. Ideal Hardware import and support the System 2000 hard drives. Where are they based?

   (A) Surrey
   (B) Manchester
   (C) Glasgow

2. The System 2000 uses a special device which allows the drive to be used with different computers. What is this device called?

   (A) A SCSI interface
   (B) A Personality Module
   (C) Disc support unit

3. The hard disc, sometimes called a Winchester, was invented by

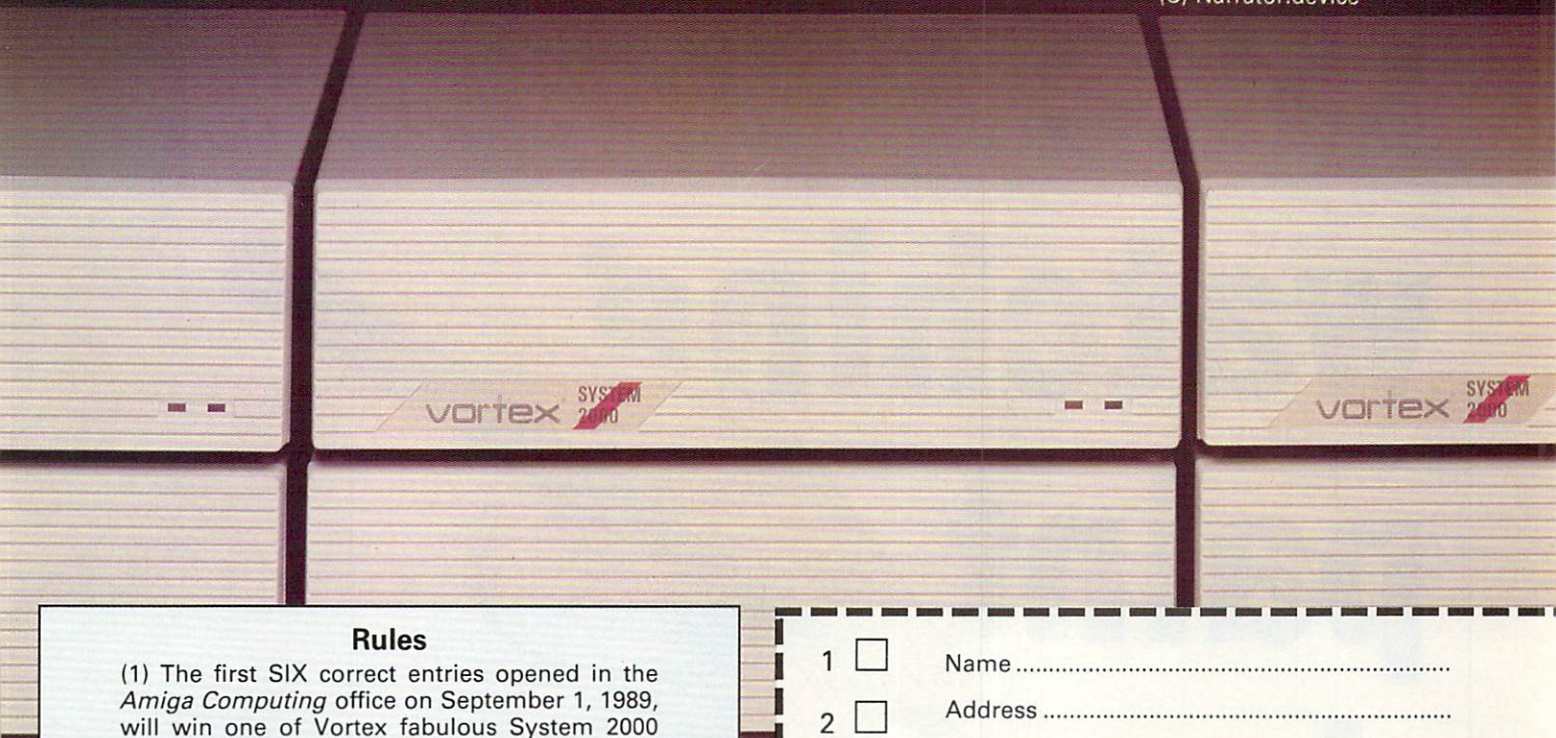
   (A) Charles Babbage
   (B) IBM
   (C) Sir Clive Sinclair

4. The System 2000 was designed by a company called Vortex. Which country is Vortex in?

   (A) Germany
   (B) England
   (C) Canada

5. Which special file is used by the Vortex System 2000?

   (A) Vmountlist
   (B) Startup-Sequence
   (C) Narrator.device



Rules

(1) The first SIX correct entries opened in the *Amiga Computing* office on September 1, 1989, will win one of Vortex fabulous System 2000 hard disc drives.
(2) You may photocopy the form, but only one entry is allowed per reader. Anyone found entering more than once will have ALL entries disqualified.
(3) Employees of Database Publications or their associated companies may not enter.
(4) The editor's decision is final.

1 ☐ Name ....
2 ☐ Address ....
3 ☐ ....
4 ☐ .... Postcode ....
5 ☐

Send to: **Amiga Computing, North House, 78-84 Ongar Road, Brentwood, Essex CM15 9BG.**

Like watching paint dry

What would you draw with an art program that offers the finest quality your printer can deliver? Stewart C. Russell drew a blank

JAGGEDNESS won't do when you've a quality publication to run. Just imagine if your *Amiga Computing* was full of grainy pictures. What do you mean, it's like that already? If it was, nobody would take it seriously, or at least no more seriously than it's taken now. So the difficulty of producing computer artwork is in eliminating the inherent pixellation.

Graphics on the Amiga are great as far as they go, which admittedly is a fair old distance. Like 99 per cent of all known computers, Amy uses raster scan graphics, allowing a large number of colours in a high resolution with a low memory overhead. This produces lovely on-screen effects, but when magnified they can appear blocky. Unless you use some very cunning smoothing techniques, lines will appear jagged when output to a printer.

In much the same way as the old Asteroids machine worked, objects can be defined on screen by a series of points. No matter how much they rotate or enlarge, they keep their smoothness. This is not strictly possible on the Amiga, not unless someone has produced an advanced vector scan graphics system for us and hasn't said anything. With Professional Draw though, it's the output that is important.

ProDraw lives on two discs and is accompanied by a 128 page manual. It needs a meg and one drive minimum. The program disc is virtually a full Workbench 1.3 distribution disc, complete with all the improved printer drivers.

OUTPUT is either to a Preferences graphics printer or to a PostScript page printer. PostScript, which was developed over there by Adobe Systems, is a method of describing objects on a page for typesetting. Rather than being a control code based system, it is an English type language. Mid-range laser printers speak it, as do vastly expensive Linotronic 2400 dpi machines. If you feel the urge for a Linotronic coming on, you'll need another couple of mortgages first – 70 biggies might buy you one, cable extra.

Hiding behind an outrageously large icon is the 270k main program. Default display mode is interlaced, so either change it pronto or don the Polaroids to cut down the painful flicker. The default mode is also the most memory hungry because all pictures are shown as wysiwyg in colour. The menu bar allows this to be changed, plus the defaults can be reset using Info's Tool Types once you've decided which settings suit you.

The right-hand side of the screen contains all the tools and gadgets that ProDraw has to offer. Initially it may seem quite limiting that there are only six drawing and six editing tools, but each is very versatile.

The Pen tool creates bezier curves and straight lines. Beziers are defined by two points and an initial curve gradient, consequently a low drain on ram. They are initially a real pain to get right because their formation isn't naturally intuitive, but the smooth curves produced once they have been mastered are worth any amount of



cursing.

The Text tool can produce two fonts, Times and Univers, from 24 point (third of an inch) to 144 point (two inch) at any angle. Each character is built up from a series of beziers, so a full set takes up well over 100k – very tight on a one meg system.

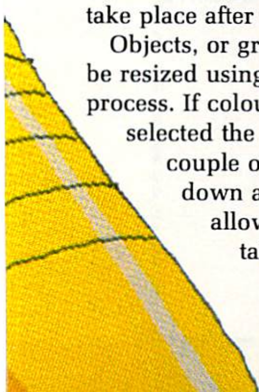
Gold Disk really intends ProDraw to be a companion program to its Professional Page DTP package, which handles fonts quite a bit better. Still, the two typestyles are very plain, and something like Gothic would have been nice to see.

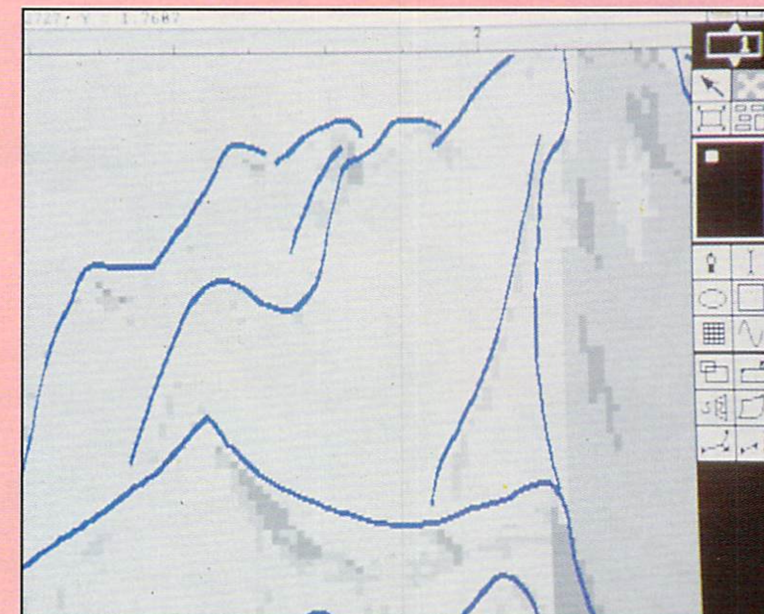
THREE of the tools produce pretty much what you'd expect from their icons – Ellipse, Rectangle and Rectangular Grid. The final tool, Freehand Bezier, is a boon for people who can't draw curves smoothly. It takes a curve traced by the pointer and smooths it according to the number of direction changes made. This tool, when coupled with ProDraw's ability to import bitmaps as tracing templates, allows artistic no-hopers like me to produce bearable artwork.

The bitmap is converted from a multiplane, multicolour image into a four grey-scaled representation the width of the page. ProDraw doesn't seem to keep a copy of this reduced form in ram on a one meg machine, so zooms cause very lengthy recalc periods. Sometimes the wait can seem so long that AmigaDos 1.6 will be released by the time it's finished, especially with a 32-colour bitmap. Stick to two-colour or four-colour bitmaps and all is sweetness and light. Nearly.

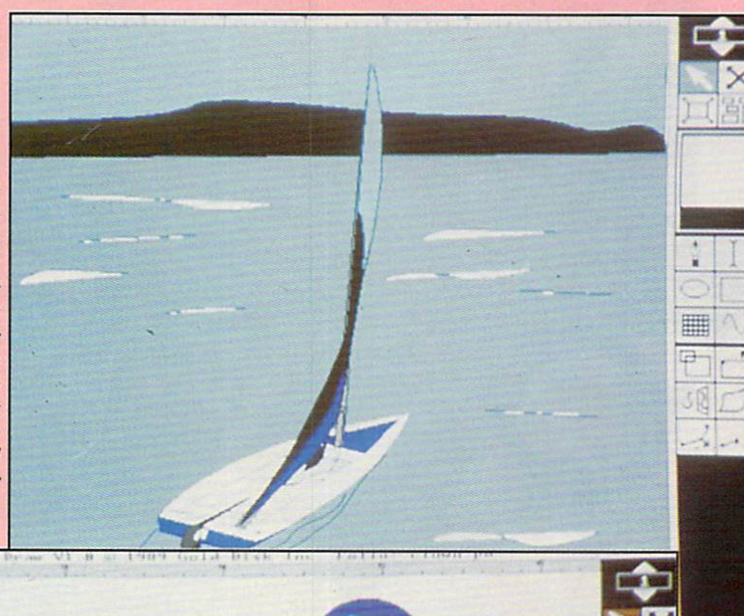
THE six editing tools are immensely powerful, occasionally at a price. Object-described graphics take up a lot of space, so many thousands of relatively simple calculations need to take place after every movement.

Objects, or groups of objects, can be resized using a fairly speedy process. If colour wysiwyg mode is selected the screen is redrawn a couple of times, slowing affairs down a tad. The Rotation tool allows faultless rotations to take place about a point. ▶

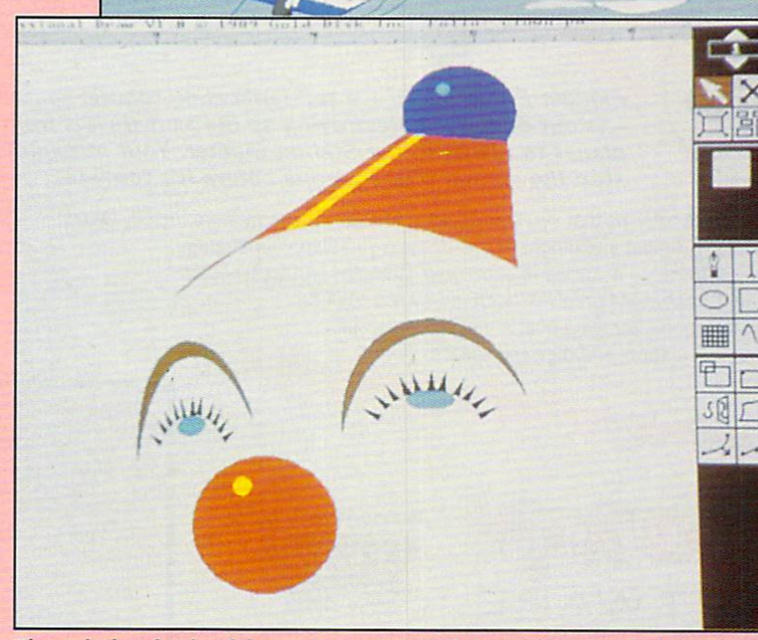




A bitmap imported from a fractal scenery generator



Default display mode is interlaced, so either change it pronto or don the Polaroids to cut down the painful flicker



The right-hand side of the screen contains all the tools and gadgets

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◄

If there are many points – as in a font character – the process is irritatingly, though understandably, slow.

By far the most powerful editing tool is Distortion. A selected group of objects is enclosed in a rectangle, which can be stretched and bent as much as you want. A gentle touch of the spacebar sets the Distort algorithm churning into motion. Depending on what mode you're using, whether there's a bitmap template visible and the number and complexity of the objects, this process can be almost instant or can take two to three minutes. This is bad if you decide that you need to tweak it a bit more – another two-minute wait ensues.

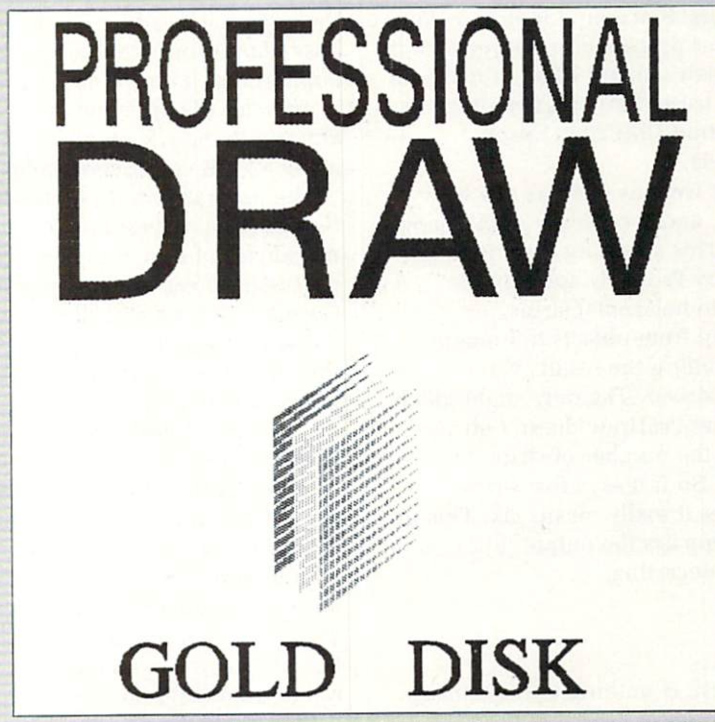
The manual makes no mention of the amount of calculation that is going on in every edit. A little paragraph would certainly not go amiss to the effect that the user might be a little more sympathetic to the developer's plight. But ProDraw is touted as a professional package, and in that respect should live up to it. Even moving the Null pointer – the basic system pointer – about the screen produces momentary Zzzzs.

ProDraw needs its manual since so many of the commands are not immediately obvious. There is a good tutorial section and a very good condensed reference section in the back for advanced users who can't quite remember how to access the more obscure commands. Most of the menu bar commands can be accessed using Ctrl+key or Alt+key combinations, so muriphobes are well catered for.

GRAPHICS packages may have all the features in the world but can be spoiled by an appalling front end. ProDraw uses the standard Intuition environment to a laudable degree and the manual gives a very good description of each of the tools and gadgets. It might take a couple of extended sessions to get it working properly, but all the cursing and head-scratching will be worthwhile.

One thing a professional package should not do is Guru – sometimes ProDraw runs out of ram and gives a custom recoverable alert, sometimes it meditates for no adequately explained reason.

A major crime in the manual is that it doesn't tell you about the online context sensitive help. This function,

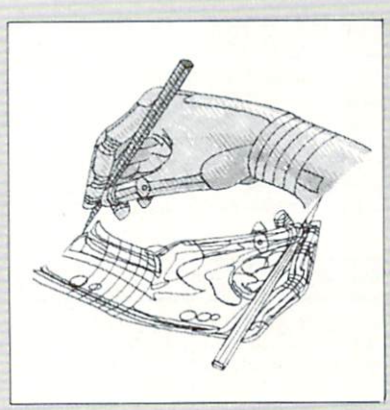


The Text tool can produce Times and Univers from 24 up to 144 point

accessed via the Help key, will produce a useful screen of the options currently open to the user and a brief summary of what each does. You'll still need the manual, but it will save shifting the pile of floppies which forms over every open computer manual.

Will ProDraw allow the artistically inept to produce fabulous pictures? The short answer has to be no. In the same way a word processor does not instantly bestow on the user the literary skills of a great author, ProDraw won't put you in the Salvador Dali league.

The program has extensive support for clip art. Unfortunately only three



This dump was produced by a 24 pin Epson LQ-500

clips come with the package, so unless Gold Disk produces some clip art discs, it's build-your-own time. This is easy enough to do, but a little more help would be appreciated. Friends could be won and people influenced if Gold Disk expanded this, and the fonts, section.

ProDraw's most notable feature – and the one which will sell it – is that all illustrations are saved in Encapsulated PostScript Format (EPSF). Many "real" publishing programs talk EPSF, such as Aldus Pagemaker and Xerox Ventura Publisher, neither of which have hit the Amiga. PostScript handles colour separation if your printer can, but it will be of more use to those with a phototypesetter.

Colours can be described using rgb values or by yellow magenta cyan (ymc, as used in printing) which can either appear as a close approximation of rgb or can be set to the user's preference. This allows colours which are similar to be discernably different on the screen. Little touches like this show that useful research went into the planning.

If a printer can produce graphics, ProDraw will probably support it. It has the full complement of Preferences 1.3 printer drivers plus all

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the smoothing and dithering parameters. Since my Linotronic 300 with raster processor and furry dice is in for repair (cough) I had to make do with my trusted though not altogether fast Amstrad DMP2000 Epson compatible.

Results were as good as can be expected, and it certainly didn't hang around. This speed increase is effected by ProDraw splitting the image into horizontal strips, translating from objects to bitmaps and outputting the results via a standard driver. The only slight glitch here is that ProDraw doesn't always calculate the number of strips correctly. So if it says five strips, sometimes it really means six. This in no way impairs the output, but is a little disconcerting.

THERE is nothing in the package that doesn't work in the way that Gold Disk meant, it's just that some of them are unbearably slow. If I was very forgiving I'd put all ProDraw's faults down to the fact that the copy reviewed here is v1.0. Gold Disk claims unlimited telephone support and a newsletter, but the economics of supplying them from Ontario to the UK are likely to shy away all but very rich people.

The program would certainly benefit from at least two or three megabytes of ram and possibly a co-processor to speed up calculations. Currently it runs at well under the speed of the behemoth AutoCAD on the utterly pedestrian PC. Those who know how quickly AutoCAD redraws the screen will feel a homecoming with ProDraw.

It will happily import and export pages from and to Gold Disk's ProPage, but only versions greater than or equal to 1.2 because earlier ones don't support EPSF. The Amiga has yet to gain full acceptance with the DTP crowd, who currently seem rather besotted with Macs.

With a bit of a rewrite to increase the speed, and some more fonts, this package could become a serious contender and really merit its "Professional" title. In its current form, despite the relatively low price, ProDraw is just too slow.

REPORT CARD

Professional Draw
HB Marketing
£139.95

EASE OF USE..........
Good results need practice and lots of thumbing the manual. Handy online help. Capable of professional quality colour separations.

SPEED......................
Bring a pillow and a good book, translations can take several minutes.

VALUE ....
Worth it if you need high quality output often, but too costly for the occasional flyposter. Perhaps a little cavalier with ram.

OVERALL *64%*
Professional by name and by output quality. Rewarding to use, but the irrational snooze periods will annoy all but the very patient.

Something wonderful has happened...

When this message appears on an Amiga's monitor you know that the virus epidemic has infected you too. Russell Wallace traces its history and dissassembles the mystery within the micro

THERE have been many important landmarks in the development of computers. Apart from the obvious ones like the invention of the transistor and silicon chip, there is the modem, the hard drive, the high level language compiler, the multi-tasking operating system and the virus.

The amazing thing about the virus is that it is a program which can operate and duplicate itself without the consent of the user – a major step towards independent computer systems. Of course, the purpose of this article is not to extol the virtue of viruses, it's to tell you how they work and how to make sure they don't on your system.

The SCA virus was the first to appear on the Amiga, indeed among the first to appear anywhere. It is located on the boot block – sectors 0 and 1 of a disc – containing up to 1k of code which is executed on boot-up before the Amiga does anything else, including execute the Startup-Sequence.

The boot block isn't really of much practical use except for copy protection systems, but it's a great hiding place for viruses.

When you Install a disc you write some standard code to this block which doesn't do anything much except pass control back to AmigaDos. The SCA virus hides itself in memory in such a way that it can survive Ctrl+Amiga+Amiga. When this happens it puts a copy of itself on the disc you reboot from, so it can spread slowly but surely through your floppy collection.

Since the virus causes no damage, you might never know about it if a message didn't come up after every 16 reboots. The exception to this is if the virus overwrites boot code that is being used for something like loading a game, which will make the disc unusable.

The SCA virus is pretty feeble by today's standards. It deliberately announces its presence and it only infects discs you boot from rather than every disc you put in the drive. Even when it's in memory and has control of the Amiga, it does nothing to stop you inspecting discs and killing the copies of it you find.

It can even be vaccinated against by SCA Protector, a program which puts a fragment of the virus code on the boot block to make SCA think the disc is already infected so it will not write itself to it.

The Byte Bandit virus is the next step up the evolutionary ladder. It has none of the above deficiencies. The only way to kill it is to turn the power off and on again. This is bad for the Amiga's electronics, but extreme measures are needed here. Leave the machine to cool off for about 20 seconds before turning it back on, boot from a guaranteed clean disc and Install every infected disc.

Like many modern viruses, Byte Bandit causes deliberate damage. When it first came out I instigated a policy of inspecting the boot block of every disc I got, looking for suspicious text.

About a week ago a virus got past my defences and infected five discs before I noticed it interfering with the system's operation. I tracked it down, disassembled it and named it the YH virus after one of the intelligible pieces of Ascii in its code.

Everyone else seems to be calling it the DASA virus after the other piece of intelligible Ascii in its code. OK, now I know that DASA and YH are suspicious text, but this sort of thing renders the old technique ineffective. So what can you do?

Nowadays you should examine the boot block with a sector editor – there are many in the public domain and I use SmartDisk. If the boot block corresponds byte for byte with an Installed disc – check the first 40 bytes and ignore the checksum in the second group of four – it's OK. If it's a recognisable virus take appropriate action. Otherwise boot it. If something like a title screen appears before or instead of the standard CLI window, it's probably OK, the strange boot code is doing something other than infecting your system.

If the CLI window comes up, the disc is suspect. Remove it from the drive, turn the power off and on again, boot up AmigaDos and sterilise the sick disc with the Install command. To avoid risk of a virus getting past your defences and infecting your CLI discs, have one disc that you never put in any drive except to boot up after power on. I use my original Workbench disc for this. A virus killer such as VirusX ▶

◀ will provide further protection.

There have been rumours of boot block viruses that can survive Install and viruses that can live on in the battery backed-up clock, even with the power off. I can assure you that this is theoretically impossible. To be executed on boot-up, a virus has to have some code in the first 40 bytes of the boot block, and these 40 bytes are erased by Install. And the Amiga *never* looks for executable code in the clock.

THE method I have outlined will provide a virtually invulnerable defence against boot block viruses. So what other kind are there on the Amiga? Until recently there were none. Then came IRQ.

This stands out from the crowd in that it is not found in the boot block. Instead it attaches itself to executable programs, one of its prime targets being commands in your C directory.

You download or otherwise acquire a new program which happens to be infected. You execute this program. The virus then attaches itself to memory by taking over a machine code vector. You run a program which, unbeknown to you, uses that vector.

IRQ opens your Startup-Sequence, picks the first filename it sees in it, sees if it's executable and, if it is, writes itself into that file. If the file is not executable, the virus will try to write to the Dir command file on that disc.

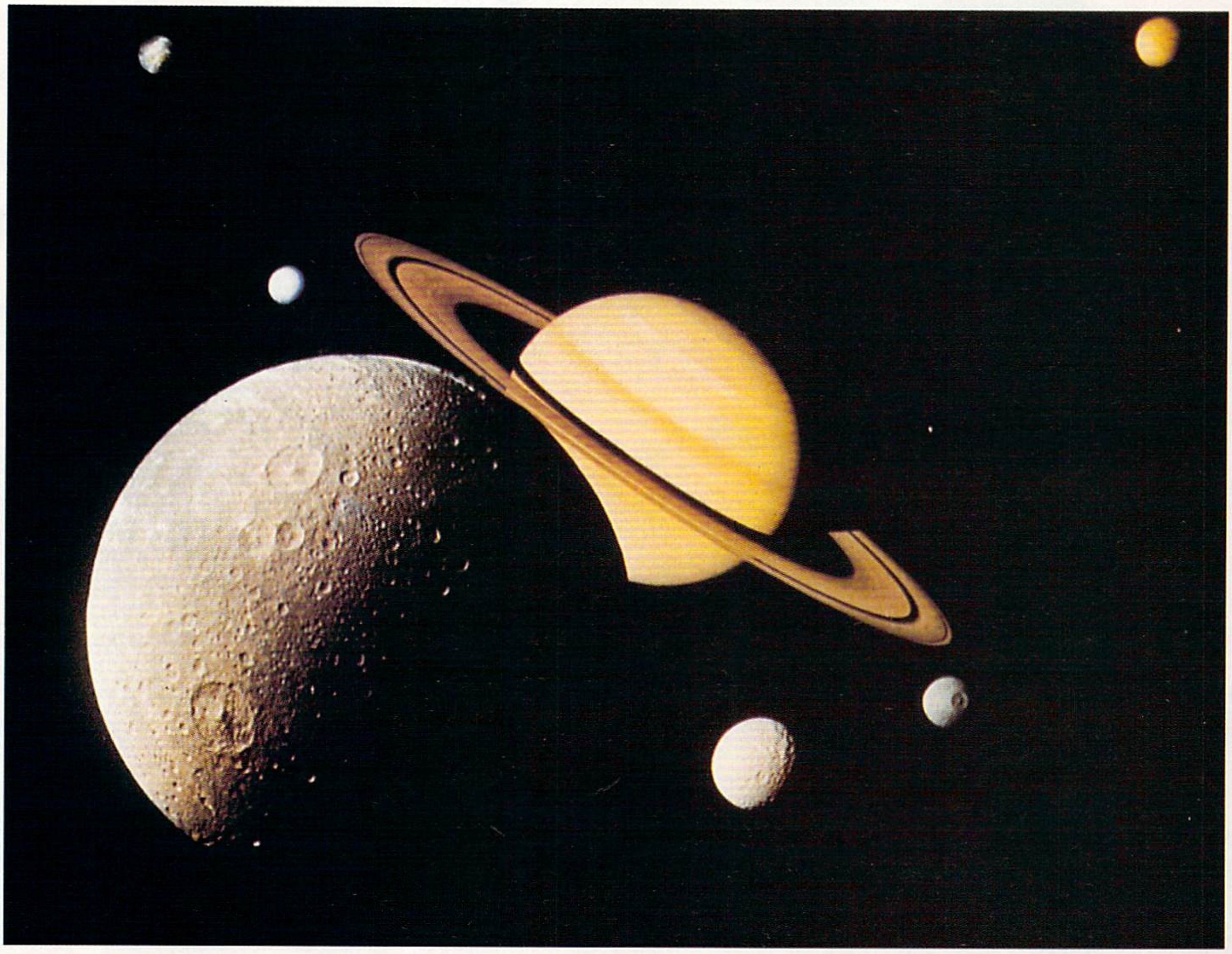
IRQ is mostly a harmless joke. It changes the title bar of the initial CLI window when you boot and it will try to write to any disc inserted, thus bringing up the *Volume whatever is write protected* requester whenever you insert a write protected disc. It will not kill commercial programs, it doesn't attack anything, it doesn't do anything malicious. It's not nice to have around, but it's certainly better than a rash of Byte Bandit.

Versions of VirusX 3.0 and greater will deal with IRQ and, funnily enough, this virus will not work under Kickstart 1.3 – you will get *Software Error* requesters whenever you run an infected program. Another public domain program called KV – for KillVirus – will check a whole directory's worth of files for this specific virus.

Viruses like IRQ present a deadly threat to computer owners, particularly as hard discs are becoming more widespread. Some will gradually destroy data over many weeks so that by the time you've detected the cause of the damage hardly any of your files are intact, backups included.

The most important protection against viruses is paranoia. Inspecting and sterilising discs should be automatic, not something ever to be forgotten.

Always think of an unknown disc as a possible threat. This is the most important computer game of all. It's great fun killing viruses, and even more fun taking them alive and disassembling them. But the stake isn't a little blip at the bottom of the screen, it's your software and data.



Creating a model universe

Forget the bikinis and bathing bimbos, Alastair Scott shows you that with AmigaBasic you can watch heavenly bodies which are out of this world

MOST people think of Galileo as the inventor of the telescope, however it was invented in 1608 by a Dutchman, Hans Lippershey.

Exactly 100 years later history was equally unfair to George Graham, the inventor of an ingenious machine which displayed the motions of the planets around the Sun with correct velocities and periods of revolution.

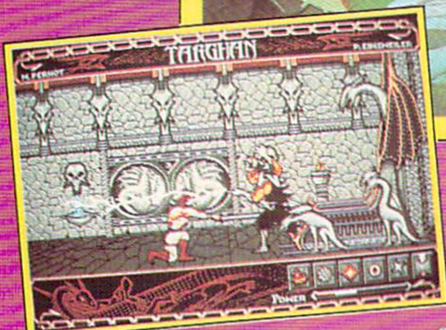
Four years later John Rowley built a similar device for his patron Charles Boyle, Forth Earl of Cork and Orrery, who took no part in its design or construction. It was eventually named after him.

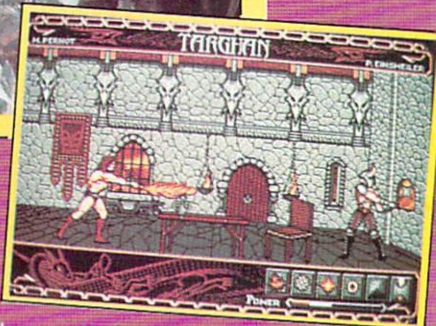
This program simulates an orrery by using the laws of celestial dynamics. Given six variables which define the size, shape and orientation of a planetary orbit, these laws give the position of the planet relative to the Sun for any time you choose, taking just a few program lines to do so. You need to enter three pieces of information to get started – the three

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Targhan

Far from Edengarhn is the castle of the evil one.

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Targhan is probably the most stunning game you'll ever play.

Targhan is an adventure-action game with more than 120 landscapes and 40 different characters. The game is playable on either keyboard or joystick.

The game offers digitised sound and outstanding graphics.

It will be released on Amiga, Atari and PC (EGA, VGA and CGA) by the end of May. The game will run on both colour and mono screens.

Look for reviews in *Commodore User, Popular, The One, C&VG, Ace, ZAP, The Games Machine* and *Amiga User International* soon!

Silmarils

To enter our competition please send your warranty cards of TARGHAN and complete the following:

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Gainstar

steps to heaven if you will:

- Due to the huge spread of sizes of their orbits, all nine planets cannot be displayed onscreen at once. Pressing I displays the inner planets – Mercury, Venus, Earth and Mars. Pressing O displays the outer planets – Jupiter, Saturn, Uranus, Neptune and Pluto.
- The date is typed in in the form dd,mm,yyyy. For example: 15,6,1989.
- The planets are displayed using "snapshots" separated by the step time. Use values of 3 to 10 days for the inner planets and anything more than 50 days for the outer planets.

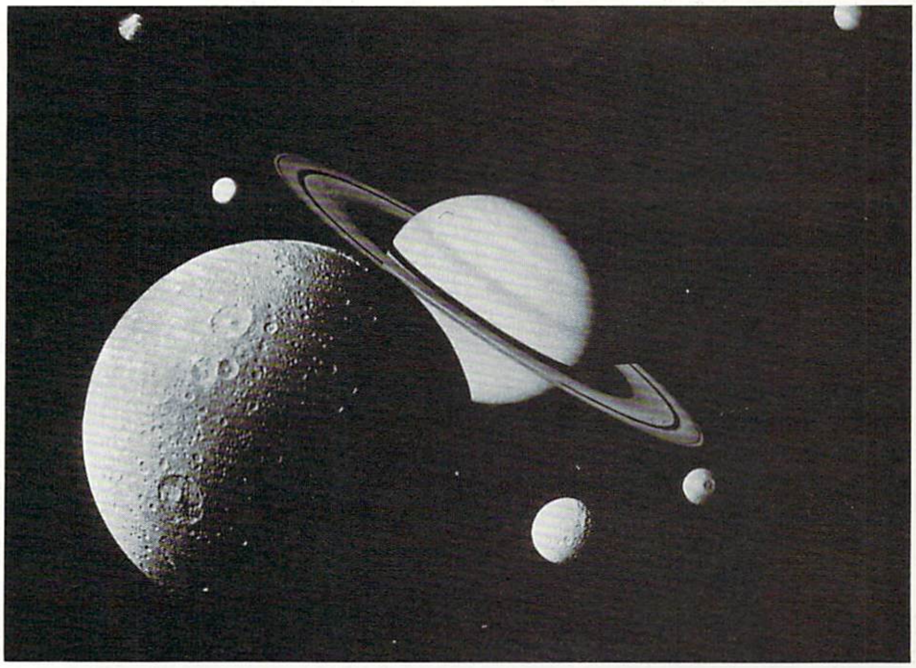
Once these parameters are entered the screen clears, the Sun is drawn in the centre of the screen and the planets begin their gravitational waltz, which only ends when you press the Escape key.

A small diagram of Earth's position relative to the Sun appears simultaneously at the top left of the screen – useful for when you are studying the outer planets. The current date is continuously updated, it appears in red at the top right of the screen.

Holding down the left mouse button displays a window with the name of each planet visible, its angular displacement and its distance from the Sun in astronomical units: One astronomical unit (AU) is the average radius of the Earth's orbit, or roughly 93 million miles. Releasing the button removes the window and lets the show go on. Finally, Right-Amiga-S freezes the program until you press another key, and Right Amiga-fullstop returns you to AmigaBasic.

STUDY the planets' motion for any appreciable amount of time and you will see many interesting features, the swifter inner planets overtaking the slower outer ones, the elliptical rather than circular shape of most orbits, particularly in the case of Mercury and Pluto and Pluto crossing and re-crossing Neptune's orbit. Try dates around 1999 for an example.

You can find the times when planets will be easily visible from Earth or lost in the Sun's glare, where the planets were when Aunt Madge and Galileo were born and when the planets are all in a line so you can hide in the coal bunker before Armageddon comes. And so on.



My main programming problem was how to display the planets without making you have to type in a gigantic program or causing the crashes AmigaBasic is prone to. Calculating the planets' positions is easy, and the program is quite simple in structure. One unexpected problem was that there is no built-in constant PI, unlike most other Basics, so I defined the variable *pi=4*ATN(1)* as an exact equivalent in the *Params* subroutine.

I ruled out bobs and sprites. There are nine planets, and typing in line after line of numbers representing each graphic would not be very appealing. Anyway, Orrery uses 16 colours in lo-res, whereas ObjectEditor uses four colour med-res and is meant for graphics much larger than the ones I needed.

I thought about using GET and PUT to pick up and display the graphics. This seemed quite promising because these commands are fast and give smooth animation. But they are poorly error-trapped. A typing mistake resulting in PUT being used with a non-existent array or a position off the screen would mean a Guru.

My chosen method is the most satisfactory and needs the least typing. The subroutine *Put.planet* draws a small filled circle of appropriate size and colour to represent the planet and adds a few details – continents for Earth, the Great Red Spot on Jupiter and a white ring for Saturn. It also stores the screen coordinates of the image in the arrays *qx()* and *qy()*. On the next pass of the program the planets' new coordinates are calculated in *px()* and *py()*.

Immediately before the new image is drawn, subroutine *Clear.planet* wipes the old one by drawing a black box over it. As there are no calculations between these two steps, the movement appears reasonably smooth.

Why not wipe the image simply by redrawing it in black, you may ask. Well, the Amiga's CIRCLE command is slow – you can see the separation between unfilled and filled circles even with the small ones used in the program – but drawing a box, filled or unfilled, is extremely fast.

LOOK at subroutine *Small*. It draws the Earth-Sun picture using only three boxes – two for the bodies, preceded by a black one which completely wipes the previous picture. It is so fast there is not the slightest trace of flicker, despite the crude method of clearing the area.

It may seem awkward not being able to use lots of sprites and fancy redefined character sets when writing a program for someone else to type in. However, circles, lines, boxes, points, patterns, areas and ingenuity will serve you well.

There was no need to use fancy manipulations of mouse and menu bar because there are not enough

◄ inputs or actions while the program is running to make the several k of extra programming – and subsequent typing in – worthwhile. If there were provisions in AmigaBasic for gadgets and input fields without resorting to libraries (curse you, MicroSoft) the program could have looked more professional.

Windows are useful though: WINDOW 1 is the main one and WINDOW 2 is the smaller one which displays the orbit parameters. It vanishes without disrupting the area it overprints. How many other Basics could do that?

```
' The Model Universe
' By Alastair Scott
' (c)1989 Amiga Computing
'
Start:
  SCREEN 1,320,200,4,1:WINDOW 1,"Orrery",,30,1
  DEFINT x-z:DEFDBL a-w
  DEF FNrange(k)=k-360*INT(k/360)
  PALETTE 0,0,0,0:PALETTE 1,.5,.5,.5:PALETTE 2,0,0,1
  PALETTE 3,0,.72,.88:PALETTE 4,0,.56,.2:PALETTE 5,0,.8,0
  PALETTE 6,1,0,0:PALETTE 7,1,1,0:PALETTE 8,1,.52,0
  PALETTE 9,1,1,1:PALETTE 10,.7,.7,.7
  GOSUB Params
  FOR phi=0 TO 2*pi STEP pi/6
    LINE(150,92)-(150+4*COS(phi),92+4*SIN(phi)),7
  NEXT phi
  COLOR 2:LOCATE 8,2:PRINT"Earth"
  COLOR 10:LOCATE 23,1
  PRINT"Press button for data or Esc to restart";
  LINE(10,10)-(50,50),2,b
  WHILE INKEY$<>CHR$(27)
    FOR z=lo TO hi
      ecc=elt(z,4)
      an1=FNrange(.985647332#*julday/elt(z,1))
      an2=radian*(an1+elt(z,2)-elt(z,3))
      psi=FNrange(an1+elt(z,2)+twodeg*ecc*SIN(an2))
      phi=radian*(psi-elt(z,3))
      rad=elt(z,5)*(1-ecc*ecc)/(1+ecc*COS(phi))
      rad(z)=rad
      psi(z)=psi
      px(z)=150+scale*rad*COS(psi*radian)
      py(z)=92-scale*rad*SIN(psi*radian)
    NEXT z
    GOSUB Date:GOSUB Small:IF MOUSE(0)THEN GOSUB Info
    FOR z=lo TO hi:GOSUB Clear.planet:GOSUB Put.planet:NEXT z
    julday=julday+stime:julian=julian+stime
  WEND
RUN

Small:
  an1=FNrange(.985637094#*julday)
  an2=radian*(an1-3.76286301#)
  phi=FNrange(an1+98.83354+twodeg*.016718*SIN(an2))
  LINE(11,11)-(49,49),0,bf:LINE(29,29)-(31,31),7,bf
  LINE(30+16*COS(phi*radian),30-16*SIN(phi*radian))-STEP(1,1),4,bf
  RETURN

Info:
  WINDOW 2,"Information",(20,40)-(210,90),16,1
  FOR a=lo TO hi
    COLOR 10
    template$=" \         \ ###"+CHR$(176)+" ##.##AU"
    PRINT USING template$;planet$(a),psi(a),rad(a)
  NEXT a
  WHILE MOUSE(0):WEND:WINDOW CLOSE 2:RETURN

Put.planet:
  x=px(z):y=py(z)
  CIRCLE(x,y),cir(z),col(z),,,1:PAINT(x,y),col(z)
  IF z=3 THEN GOSUB Earth
  IF z=5 THEN GOSUB Jupiter
  IF z=6 THEN GOSUB Saturn
  qx(z)=x:qy(z)=y:RETURN

Earth:
  LINE(x-1,y-1)-(x-1,y+1),4:LINE(x+1,y)-(x+1,y+1),4:RETURN

Jupiter:
  LINE(x-2,y+2)-(x-1,y+1),6,bf:RETURN
```

```
Saturn:
  LINE(x-4,y)-(x+4,y),9:RETURN

Clear.planet:
  x=qx(z):y=qy(z):LINE(x-4,y-4)-(x+4,y+4),0,bf:RETURN

Params:
  RESTORE Planets
  FOR a=1 TO 9:READ planet$(a),col(a),cir(a):NEXT a
  pi=4*ATN(1):radian=pi/180:twodeg=2/radian
  COLOR 9:PRINT:PRINT SPC(6)"Inner or outer planets? ";
  pl$=""
  WHILE INSTR("*IO",pl$)<2:pl$=UCASE$(INPUT$(1)):WEND
  COLOR 6:PRINT pl$
  COLOR 9:PRINT:PRINT SPC(2)"Starting date (DD,MM,YYYY) ";
  COLOR 6:INPUT"",day,month,year
  COLOR 9:PRINT:PRINT SPC(8)"Step time (days) ";
  COLOR 6:INPUT"",stime
  planet=ABS(pl$="I")
  ON planet+1 GOSUB Outer,Inner
  yr=year:mo=month
  IF month<3 THEN yr=yr-1:mo=mo+12
  a=yr\100:b=2-a+a\4:c=INT(365.25*yr):d=INT(30.6001*(mo+1))
  julian=b+c+d+day+1720994.5#:julday=julian-2444238.5#
  CLS:RETURN

Outer:
  lo=5:hi=9:scale=2:RESTORE Outer.data:GOSUB Get.data:RETURN

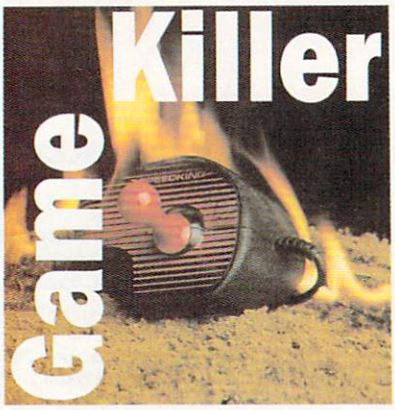
Inner:
  lo=1:hi=4:scale=50:RESTORE Inner.data:GOSUB Get.data:RETURN

Get.data:
  FOR a=lo TO hi:FOR b=1 TO 5:READ elt(a,b):NEXT b,a:RETURN
Date:
  f=INT(julian+.5)
  IF f<2299161& THEN
    a=f
  ELSE
    g=INT((f-1867216.25#)/36524.25):a=f+1+g-g\4
  END IF
  b=a+1524
  c=INT((b-122.1)/365.25)
  d=INT(365.25*c)
  e=INT((b-d)/30.6001)
  day=b-d-INT(30.6001*e)+julian-f
  IF e>13.5 THEN month=e-13 ELSE month=e-1
  IF c<2.5 THEN year=c-4715 ELSE year=c-4716
  IF month<3 THEN year=year+1
  month$=MID$("JanFebMarAprMayJunJulAugSepOctNovDec",month*3-2,3)
  COLOR 6:LOCATE 2,28:PRINT USING"## & ####";day,month$,year
  RETURN

Inner.data:
  DATA .24085,231.2973,77.1442128,.2056306,.3870986
  DATA .61521,355.73352,131.2895792,.0067826,.7233316
  DATA 1.00004,98.83354,102.596043,.016718,1
  DATA 1.88089,126.30783,335.6908166,.0933865,1.5236883

Outer.data:
  DATA 11.86224,146.966365,14.0095493,.0484658,5.202561
  DATA 29.45771,165.322242,92.6653974,.0556155,9.554747
  DATA 84.01247,228.0708551,172.7363288,.0463232,19.21814
  DATA 164.79558,260.3578998,47.8672148,.0090021,30.10957
  DATA 247.691,209.439,223.5224,.2502,39.409

Planets:
  DATA Mercury,9,1,Venus,7,2,Earth,2,2,Mars,8,2,Jupiter,7,3
  DATA Saturn,8,3,Uranus,3,2,Neptune,5,2,Pluto,9,1
```



Joystick jihad

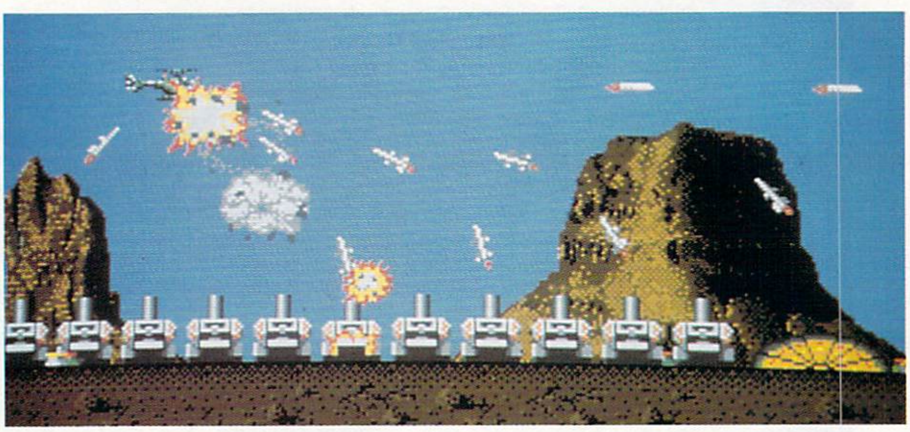
Max the Hacks, the man who is so good at games he can play I Spy with his eyes shut, shows you how to be as good as he is

SOMEONE with his own keyboard steroids is Stephen Walker from Basingstoke. He is so good at Police Quest it's criminal. Stephen says all the telephone numbers you should need during the game are 555-6674 for Lt Morgan and 555-9222 for the taxi firm you need to get rid of Sweety in the hotel room. Pressing 0 on the phone in the hotel gets two more useful numbers.

Stephen also says that after talking to the hotel barman you should say "gamble" to get further in the game. When you join the first poker game don't quit. Try to win by getting more than $1,000. In the second game it is harder to win, so just play 40 hands without running out of money.

When asked if you talk business answer "yes" and follow the man up to the top floor. Before entering the apartment use Ctrl-D to call your backup. Always check the car's wheels before leaving base by using the Check Car command. And if you are attacked by bikers use the nightstick which is inside the car. Thanks, Stephen.

At the end of his letter Stephen says he is having trouble with Guild of Thieves, so it is lucky that Darren Self has written in from Berkshire with some tips. One of Stephen's problems is crossing the coloured squares. The solution is to follow the rainbow backwards – violet, indigo, blue, green, yellow, orange, red. Thanks a bundle Darren, Mr Postie will be bringing you a present.

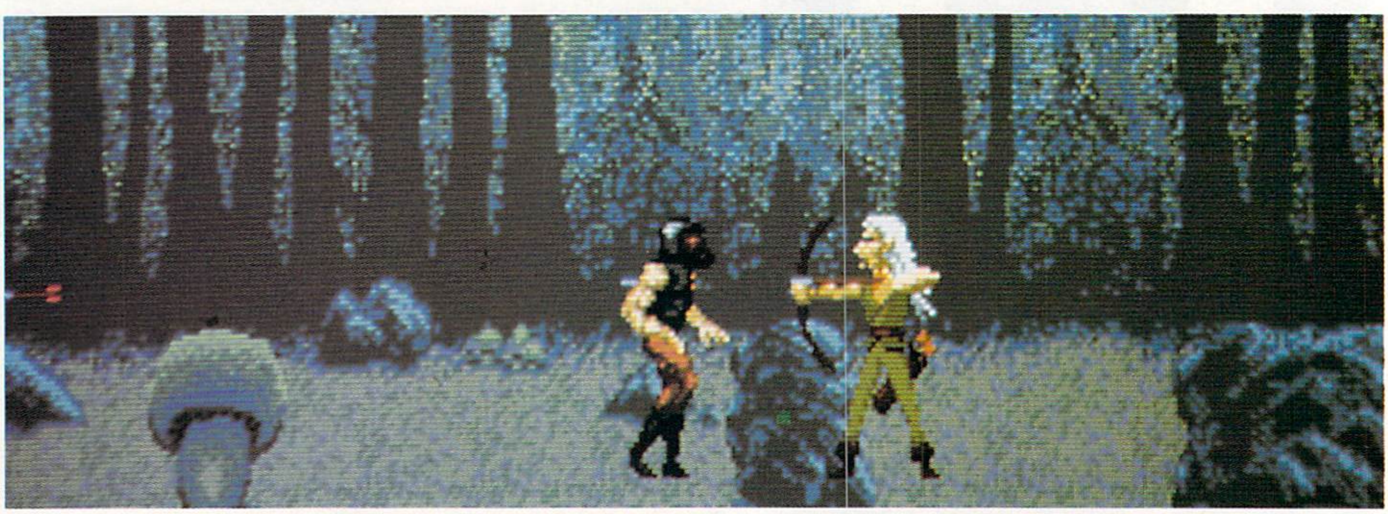


THERE is one game, one very, very special but difficult game, which has won the hearts of all at *Amiga Computing* – Silkworm. There are two versions with different cheat modes. For early versions get to the controls set-up page by pressing F10 from attract mode, hold down Help and press Fire to get infinite lives.

If you have a later version press F10 from attract mode for the controls page and type SCRAP 28. The single space between P and 2 is important. The screen will flash once. You now have infinite lives.

Pressing F1-F10 will slow the game down from normal (F1) to a crawl (F10). Pressing 1 to - (minus) lets you jump levels.

Scorpion was the rave game in the



June issue. It may be good, it may have great sound and sprites but the regular quota of lives just isn't enough. To get lots more lives (about eight I think), type INPORTLIGAT into the high score table. There are other things you can type in. CRL is one, Clement is another. Try them for a laugh.

READERS who took the editor's advice last month and stopped eating so they could afford a Commodore hard drive are probably looking for some games to put on to it. They are also probably very hungry. Ian Mackenzie from page 93 of my London A to Z has some advice for them.

Since you can't eat Cinemaware's Lords of the Rising Sun, however yummy the graphics are, you can put it on the hard drive, despite the message from Mirrorsoft saying you can't. Make a directory for the program and call it "Lords".

Using CLI, copy all the files using the line *copy df0: dh0:lords all*. Do this for both discs. Then edit your Startup-Sequence file to include the lines *assign RisingSun1: dh0:lords* and *assign RisingSun2: dh0:lords*.

Then whenever you want to run the program make sure disc 1 is in the floppy drive and type *run Main*. The game needs the floppy for the disc protection, but actually loads off the hard drive.

Baal is not what one sheep said to another, but the name of a game from Psyclapse. Jerome Sanders from the Netherlands has sent in some tips and is going places. The particular places are the grid locations in X-Y format for objects.

You will find things at 00-53, 12-62, 17-28 where you will get weapon number 2), 28-50 – where you will get weapon number 3 – and 36-28, 24-04, 48-02, 48-65 and 48-65 which is the exit to level 2.

Note that from 40-02 to 48-65 is too ▶



Arr, Max lad . . .



Lords the hard way

◄

far. Make a stop at 17-28 or 36-28 and take a new power cartridge before you continue to 48-65. When there are two cartridges leave one behind at the first visit.

Level 2 has fewer stopping points, but often more than one object per location. Hop through these. 12-16, 30-32, 24-00 and 12-53 are the resting place of weapon number 4 and the exit to level 3 and the battle with Baal.

You don't have to go to all the places in this order, but on level 1 it is wise to get weapon 3 as soon as possible. The best approach to level 2 is to go to 12-53 twice, once to get weapon 4 at the first opportunity and then again when you've picked everything up and are ready for Baal.

Finally Esther, some solutions to trick shots from Firebird's Maltese Joe Plays 3D Pool. Shot 1: 0768 024 63 10. Shot 2:1002 041 63 09. Shot 3:0032 100 63 00. Shot 4:0962 024 63 00 and Shot 13:0004 054 58 20. A great game, you'd be daft not to buy it. OK, Orlando?

That's all for this month, I'm off to wax my joystick ready for next month's top tip bashing, but I need help. So if you have a hint or a hack pop 'em in the post to Max The Hacks, Amiga Computing, North House, 78-84 Ongar Rd, Brentwood, Essex, CM15 9BG.

Archer MacLean's codes for International Karate Plus

ARCHER likes to send messages to people he knows in his games. You can read them if you know what to type. Some codes change what is happening, but don't swear twice or the program will reset. Just type them in.

FISH, **BIRD**, **PAC**, and **PERI** make different things happen.
SLAN produces a line of slanted text.
FAST speeds up the music while you hold down the letter T.
FILT turns the music filter on.
DATE shows when the program was written.
TITL jumps back to the title screen.
FREZ will freeze the game. Great for screen shots.
GERM changes all the messages to German.
UK turns them back into English.
ARCH, **EDHK**, **FOOK**, **ANGL**, **SHAH**, **ANBK**, **STEW**, **GPZP**, **SIMR**, **SUNL** and **JACQ** are all friends.
JUMP is an advertisement for Archer's custom jumper service.



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AMIGA Letters

Piracy and copyright

WHY cannot consent be given for software to be copied at home in return for a royalty fee covering programming costs?

This would give each copy the legal status of an original in terms of copyright and enable those who wish to pay for the use of the software, but cannot afford the overheads of commercial distribution, packing, copying and advertising, to do so.

E.O. Hobden, Lincoln.

Such a system exists, it's called shareware. Software is freely distributed on the basis that if you like a program you will send the author some money.

This is much more popular in the US, where users are more honest about coughing up. We will be bringing you some of the best shareware on future cover discs. Please send the authors a contribution. We will be.

Next move?

MY interests lie in the field of art and animation. At present I have Deluxe Video and Deluxe Paint II and am contemplating buying Aegis Animator and Images along with a music compilation software of some type, as a suitable package.

But here are my main expansion considerations: Should I invest in an A501 memory extension, a dual 3.5in second/third disc drive, a single floppy drive or upgrade completely to a more powerful machine, such as an A2000?

Marcus Barrett, Somerset.

We would go for Deluxe Paint III as an animation package. If you have DPaint II it is a cheap upgrade (£30), and very easy to use. You will need at least 1 meg of ram, preferably more if you want to produce a decent animation.

A second drive of some sort is a must and for these reasons go for the Commodore A590 Hard Drive Plus. You can add ram more cheaply than buying an A501 and it saves floppy shuffling because everything fits on to the hard disc.

Leaving home ain't easy

WOULD it be possible to connect the Plotmate A3M plotter I am using with an Archimedes in school for GCSE technical drawing to my Amiga A500 for use with programs such as Aegis Draw 2000?

A friend is planning to buy an Amiga A500 but is moving to Canada soon. I know that the PAL and NTSC systems are different, but would buying a Commodore hi-res monitor solve the problem of running European software on an American machine, or would it be pointless buying any software here before moving to Canada?

R.S. Jones, Gwynedd.

There should be no problem using the plotter with your Amiga and Draw 2000. Have a look at X-Cad Designer.

Some programs are deliberately fixed so that they will only work on a PAL or NTSC system, not both. Buying a Commodore monitor will not solve the problem.

The best solution is for your friend to wait until he gets to Canada and buy everything out there. Check any software bought here carefully.

Sounds better

ONE small piece of knowledge has escaped the entire Amiga population. The Amiga possesses an audio filter. This amazing piece of hardware can be switched off unless you have an A1000 and you get all your treble back. It is very simple to do, and can be achieved by the following machine code instructions:

```
BSET #$01,$bfe001 Power light off, filter off or...
BCLR #$01,$bfe001 Power light on, filter on. or...
BCHG #$01,$bfe001 Toggle state of filter
```

Will all software developers please take note.

Please plug my bulletin board: If the line isn't dead and I haven't been cut off, you can call it on 0362 698867. It runs on a Beeb at the moment, but I have almost finished a new package written in 68000 for the Amiga.

One last point. Our group (The TMB Dev.Corp) is currently working on a new game for the Amiga. We need original music rather desperately. If you think you can help, get in touch with us.

Toby Simpson Spixworth, Norwich.

Hi praise

WELL, what can I say! I am 29 years old, and for a very long time now I have had an addiction for computer games. It is all very well being able to beat the highest score on the games in the pub, but when you come down to realise how much money you have spent at the end of the evening, it hurts.

I very soon came to the opinion that the Amiga was by far the best value for money. I have read all the magazines that are going around for it. I am not creeping by saying this *(oh yes you are – ed)* but your magazine leaves all the others standing.

Your games reviews could not be bettered; in fact I won't buy a game unless I have heard what you have got to say about it in the first place. When you show screen shots they are very clear images.

I bought my computer originally just to play games, and to save myself a lot of money. Because of your magazine, I am now interested in expanding my Amiga and learning how to program it myself.

Now I can get down to why I originally started to write this letter. I am that enthralled by your magazine that I would like to be able to boast about having the full collection on my bookshelf.

I have numbers 5,7,8,9,10,11 and would very much like to know if it is possible to obtain the copies I am missing. Also, do you supply a binder to keep them in mint condition? If so, please let me know the price as soon

▶

as possible, and I would forward a cheque straight away.

Chris Maynard,
New Milton, Hants.

We suppose you want a freebie? Well, it is nice to be appreciated. Back numbers and binders are available from the subscriptions department which is on 051-357 2961. Take out a sub to get the binder and a host of other goodies free.

Talking windows

PLAYING around with the Say command under Workbench, I have found it impossible to alter the pitch and speed of the computer's voice. I have tried every possible combination of inputs in the phoneme window, all to no avail. The manual talks about changing all parameters together – but how?

Mr P Ambrose,
Southampton.

The obvious thing to do when using Say by clicking on the icon is to type into the phoneme window the string you want to have read followed by the option. This is wrong on both counts. You should type the option followed by the string into the input window. Click it in first.

Clickable scripts

UNDERSTANDING CLI makes using the Amiga very much easier. I've written several batch files to do various tasks. To access them I have to go into CLI and Execute them.

I thought it would be a good idea, however, to create an icon for the task and be able to run it from Workbench without needing to open CLI.

Unfortunately, all I know how to do is edit an icon using ICONED, which is no good. Could you please supply me with a solution if one is available? Many thanks.

Martin Lea,
Lancs.

Once again the solution is in the public domain. Get a copy of Fish disc 65 which contains the ICONX program. This will help you create icons for all sorts of programs.

Stop frame

CONGRATULATIONS on such a superb magazine. The Amiga is a brilliant computer and deserves such support. The main thing I use my A500 for is art and design. I would be grateful if you could supply me with details on digitising pictures – video digitising and so on. I am most interested in this field and would welcome your response.

C. Hoper,
Portsmouth.

DigiView Gold produces the best digitising results – a full colour image using filters. It costs £150 excluding the black and white camera. It is available from HB Marketing on 0895 443333. DigiPic and SuperPic from Precision (01-330 7166) grab frames faster. DigiPic was reviewed in our June 1988 issue.

Misleading adverts

SURELY you check adverts before publishing them in your magazine, if so, why don't you notice errors like "comes with Kickstart 1.5" What? Jumpstart 1.4 is around and available if you're a registered developer, 1.5 is still "erm, we're thinking about it".

It is either their name for their own product, if so it shouldn't be allowed as it misleads people, or a typo – but the same error has appeared in two magazines. Just a tiny little bit of checking would eliminate that sort of thing.

Martyn Oakley,
Surrey.

Ads are checked to make sure they are legal, decent, honest and truthful. They are not checked for stupidity. The editorial department and advertising departments work separately. This is good because it removes any likelihood of us saying that Wizzo Games' latest is also the greatest just because the ad department have their eyes on Wizzo's budget.

Any company which advertises things it doesn't have hurts itself in the end by ruining its reputation.

Only the best

WHY review totally useless games? Please, in future, only review games that we want to buy. If it is a waste of disc space we don't want to know. Why don't you make a list of all the amazing games we ought to buy? Here's a couple of mini reviews to start you off...

POPULOUS: Brilliant. Everyone ought to have it. Granted, it's ported, but that's a small price to pay for such an addictive game. Takes on a whole new meaning when played over the serial port – friends become immortal enemies in seconds.

But watch out, if the game gets mega-complex it collapses over the serial port and won't continue. It seems that if your cable is high quality you may be OK.

INTERCEPTOR: Classic.

SUPER HANG ON: Amazing non-ported game. Great fun with the built-in cheat mode using the machine gun on the front.

PACMANIA: Really shows off the Amiga's abilities. For a real laugh play it next to the ST version.

Good points... yes, there are some. The paper you print your magazine on is very nice. Most posh! Nice logo on the front, good use of colours. A sense of humour (I hope).

No, really, your reviews are good, and on the whole accurate. The news pages are informative. In fact, apart from all the stuff above, the magazine is perfect!

Matthew Likierman,
London W8.

Unless we review the naff games how do you know which ones they are? Besides, the evil reviews are the funniest to read.

When is IFF not IFF?

PLEASE advise me. I have Kindwords and while, I am happy with most aspects of the system, I am very disappointed with the graphics.

The manual is quite straightforward in its instructions for using graphics. I will quote the relevant passage:

"Kindwords allows you to insert graphics made by any program which saves pictures in IFF format. You may insert low res or medium res images".

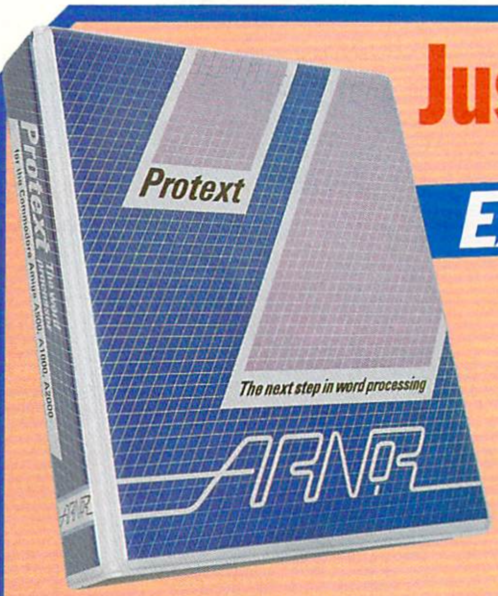
I use Photon Paint graphics which are IFF format. No matter what picture I try to insert – even just a simple black and white line drawing of a square, for example – the message; "Not IFF Format" appears on the screen.

S. Palmer,
Luton.

Photon Paint only works with hi-res HAM images. Kindwords needs medium or low-res images. A word processing program which supported 4,096 colour HAM mode would run too slowly to be useable. Have a look at one of the non-HAM art programs such as Deluxe Paint.

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Reviewed in the December issue of Amiga Computing

At last, an inexpensive and very easy-to-use spreadsheet that's simple enough for beginners, yet sophisticated enough for professionals.

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The manual has been carefully designed to cater for all types of user, from the novice to the expert. It includes a tutorial with step-by-step instructions, a glossary of computer terms, a quick reference card, a full reference section and a comprehensive index.

"I really liked the package to begin with, and first impressions are important... Digita deserves full marks for the way in which the menus and command driven operations have been implemented... It's a no nonsense spreadsheet... I'd certainly recommend it for general purpose spreadsheet work". – **Rex Last, *Amiga Computing*, December 1988.**

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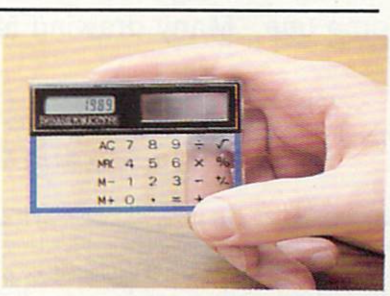
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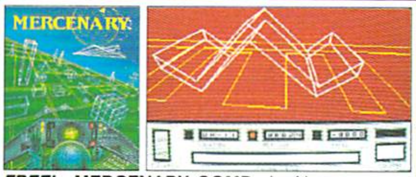
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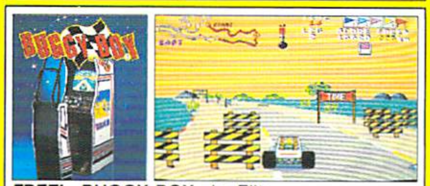
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